SMR ✓
(E) (S)
ACTIVITY OX670
SOX FEB/95

TEMPVS REPARATVM

Archaeological and Historical Associates

EXCAVATION OF AN IRON AGE AND EARLY ROMANO-BRITISH SETTLEMENT

MANORHOUSE FARM
HATFORD
OXFORDSHIRE

TR31060DFA

ON BEHALF OF:

A B Townsend
Sands and Gravels (Standlake) Ltd
Standlake
Near Witney
Oxon
OX8 7PY

FIELD SERVICES DEPARTMENT

24 November 1993

PRN 15,220

TEMPVS REPARATVM
Archaeological and Historical Associates Limited

29 BEAUMONT STREET
OXFORD OX1 2NP

TEL: 0865 311046
FAX: 0865 311047

EXCAVATION OF AN IRON AGE AND EARLY ROMANO–BRITISH SETTLEMENT

In connection with a S52 planning permission for sand extraction

MANORHOUSE FARM
HATFORD
OXFORDSHIRE

TR31060DFA

ON BEHALF OF:

A B Townsend
Sands and Gravels (Standlake) Ltd
Standlake
Near Witney
Oxon
OX8 7PY

FIELD SERVICES DEPARTMENT

Site Code: OXHAMF 91

Report prepared by

R Bourn BA CertArch AIFA

Status: Report for presentation to curatorial authority

24 November 1993

CONTENTS

APPENDICES

FIGURES

ACKNOWLEDGEMENTS

Funding for the excavation was provided by Sands and Gravels (Standlake) Ltd, to whom particular thanks are due. Sands and Gravels (Standlake) Ltd also provided all earthmoving equipment. I would also like to thank Mr Bayliss, the farmer, for his co-operation and patience. The excavation was directed by Mr James Symonds and was supervised by Mark Turner and the author. Thanks are due to all the team employed on the 1991 season – Sarah Harding, Anna Badcock, Paul Gething, Cornelius Barton, Jim Crawford, Jaqui Mulville, Rob Pierce, and Simon Garrod – who worked long hours without too much complaint. I am also indebted to Mr Hornbrook, the guardian of Oxfordshire's Sites and Monuments Records.

I am very grateful to all the contributors to this report. Jane Sandoe drew all the illustrations. I would also like to thank Dr Jonathan Hunn for comments on the archaeology and the text.

1.0 ARCHAEOLOGICAL BACKGROUND

1.1 Summary

1.1.1 The site at Manorhouse Farm (NGR SU 331 955) is situated c 0.75 km north of the village of Hatford in the Vale of the White Horse, Oxfordshire (Fig 1). Excavation was carried out by a Tempvs Reparatvm field team between August and October 1991. Two areas were excavated, Area A covered 0.82 ha and Area B covered 0.27 ha. These two areas revealed two phases of activity: middle Iron Age and late Iron Age/early Romano-British. The middle Iron Age phase included a circular building, a cobbled yard surface and a small number of pits and ditches; the late Iron Age/early Romano-British phase consisted mainly of shallow pits and ditches as well as a trackway. The remnants of an unphased stone structure were also uncovered. Although the site chronology consisted of two phases, these were not distinct. The ceramic evidence indicates that there was probably continuous occupation from the middle Iron Age through to the early part of the second century AD where the sequence abrubtly ends. During this time the settlement pattern appears to have been fairly fluid with frequent shifts of focus.

1.2 Introduction

1.2.1 Tempvs Reparatvm was commissioned by Sands and Gravels (Standlake) Ltd in autumn 1989 to carry out an archaeological assessment and field evaluation of the site proposed for mineral extraction at Manorhouse Farm, Hatford (**Figure 1**). The field evaluation was carried out in two seasons (of which the first was much the more significant) and was reported on in **TR 31060ODA** (14/9/89) and **TR 31060ODC** (31/8/90).

1.2.2 In the light of the assessment conducted in 1989, planning permission was granted for the quarrying of sand subject to a Section 52 agreement regarding archaeological remains. In response to a brief from the Acting County Archaeologist at the time (Dr Keith Ray), Tempvs Reparatvm prepared specifications for the archaeological management of the application area (**TR 31060ODB** 3/3/90); it is these specifications which governed the excavations reported upon in this document.

1.2.3 Manorhouse Farm, Hatford (NGR SU 331 955) is located in the valley of Frogmore Brook on Hatford Down (**Figs 1 and 2**). Although the site itself contained no known archaeology, the valley was considered to have a high archaeological potential. Evidence of both Iron Age and Romano-British settlement have been revealed during quarrying to the south-east of the site (PRN 7570, 9728, 13565, 13568) (Hingley 1980, unpublished), while Romano-British pottery has been discovered immediately to the south (PRN 10616, 12755, 12754, 12756). Stone wall foundations, tile and Romano-British pottery indicative of a substantial stone building, possibly a villa, were found during fieldwalking by D Miles (Oxford Archaeological Unit) (PRN 12754) on the opposite bank of Frogmore Brook (Miles 1982). Cropmarks of rectangular enclosures and linear features have been recorded immediately to the west of the site (PRN 12490). Earlier activity has been indicated by a bronze looped spearhead found beside Frogmore

Brook. A post-medieval brick kiln is known to have been located in Brick Kiln Copse (PRN 5191) (all information courtesy of Oxfordshire SMR) (Fig 2). The valley has been common pasture until fairly recently when ploughing has revealed a high density of Romano-British activity (Miles 1982, 63; Tingle 1991, 56).

1.3 Geology and topography

1.3.1 Hatford is situated on the Corallian Ridge 4 km due east of Faringdon (Fig 1). The site itself lies to the south-west of Sandy Lane c 0.75 km north of the village. It lies c 90 m OD on a south facing slope. The land slopes off to the south-east towards the meadows of Frogmore Brook (80 m OD). The geology consists of deep free draining sand deposits which, on the higher ground to the north-west, have been capped by limestone (Jarvis 1973).

1.3.2 From the site there is a clear view across the Vale of the White Horse toward Uffington and the Berkshire Downs. Any settlement located here would have been very exposed to the prevailing south-westerly wind; a fact frequently noted during the excavation.

1.4 Field evaluation

1.4.1 During September 1989 forty-three 50 x 2 m machine-cut trenches were excavated (an overall area of 0.43 ha, a 1.72% sample of the proposed mineral extraction area) with the purpose of evaluating the potential archaeology of the site. Three areas of archaeological activity were located (Fig 3). Iron Age and Romano-British features were revealed in Trenches N, P and W. Iron Age features were also discovered in Trench E, 300 metres to the north-west. A second season of evaluation work was carried out immediately to the north of Brick Kiln Copse during August 1990. This consisted of a further eight 50 x 2m trenches thereby bringing the sample size up to 2%. Only two trenches (AT and AU) contained archaeological features. AU contained four shallow pits which produced late Bronze Age pottery whilst AT contained a feature which produced Romano-British pottery (Fig 3).

1.5 Geophysical survey

1.5.1 In early August 1991 Geophysical Surveys of Bradford carried out a magnetometer survey of two blocks of land (A and B) covering an area of 1.5 ha in the area of Iron Age and Romano-British activity identified in Trenches N, P, and W (Figs 3 and 4) (Appendix 1). The conditions for the survey were considered to have been excellent. The results can be summarised as follows. A trackway was detected running east-west across the survey area on the edge of the higher ground. In both Areas A and B a complex of anomalies were indicative of at least one round-house, rubbish pits and similar deposits, and a series of enclosure ditches. The results revealed a complex of archaeological features including an east-west trackway running alongside a series of ditches (Fig 4). The archaeological remains also appeared to extend beyond the limits of the survey and no boundary could be detected.

2.0 THE EXCAVATION

2.1 Aims and strategy

2.1.1 The principal aim of the 1991 excavation was to examine the nature of the Iron Age and Romano–British settlement at Hatford Down identified during the evaluation. Most of the settlement lay c 200 m to the east and had already been destroyed by earlier quarrying and consequently had not been understood. The excavation was intended to answer questions about the morphology, size, economy, social status and environment of the site. Furthermore, in comparison to the gravels of the Upper Thames, the valley slopes are poorly understood (Lambrick 1992, 79). Manorhouse Farm provided a potential opportunity to redress this imbalance.

2.1.2 On the basis of the geophysical survey two areas were selected for further investigation. Areas A (0.82 ha) and B (0.27 ha) were stripped and excavated between August and October 1991. This work revealed a middle Iron Age circular–building, a cobbled surface and pits. Late pre–Roman Iron Age/early Romano–British ditches, as well as a series of pits and scoops were also identified. An unphased area of rubble within which it was possible to discern a stone structure was also recorded in Area A (Fig 5).

2.1.3 The areas of late Bronze Age and Iron Age activity to the west and north–west identified during the previous two seasons of evaluation work will be subject to closer investigation before a further extension to the area of mineral extraction and will be examined and reported upon in due course.

2.1.4 Due to financial limitation, time and manpower it was not possible to gain a full understanding of the site. These difficulties were further compounded by two important factors. First, there was an almost complete lack of stratigraphy; this has meant that the site has been phased upon ceramic grounds (**Appendix 2**) and, therefore, must be used with caution. The second factor was the geology: on the higher ground archaeological features were cut through limestone and consequently were clearly defined. Archaeological features located downslope, however, were cut into sand and proved difficult to define adequately. This problem was especially acute in Area B where it even proved problematic to re–locate the 1989 evaluation Trench W let alone Iron Age or Romano–British features.

2.2 Middle Iron Age features – Area A (Fig 6)

The circular building (Fig 7)

2.2.1 A circular structure [0211] was located immediately to the east of the junction between the limestone and sand. It consisted of an incomplete foundation trench (c 0.4 m wide, c 0.3 m deep) with a diameter of 9.2 m. To the west side were two gaps measuring 1.5 and 1.9 m and to the east was a gap of 6 m. It was not possible to identify which of these gaps was the original entrance. There were no recuts. The eastern terminal of the southern section was cut by a posthole [0212].

The pits (Figs 6, 7 and 8)

2.2.2 Three pits were recorded within the circular building ([0161], [0213], [0217]). All three were circular, had vertical sides and were cut into sand ([0161] – 1.03 m diameter x 0.35 m depth; [0213] – 1.20 m x 0.44 m; [0217] – 1.44 m x 1.0 m). Four more pits were located 20 m to the south ([0249], [0250], [0251], [0255]). Except for [0251] the pits in this group were circular and had rounded profiles. [0251] was deeper than the others (0.5 m) and had a bag–shaped profile. All eight of these pits had similar fills, dimensions and pottery.

The ditches (Figs 6 and 7)

2.2.3 [0215] was a discontinuous ditch immediately to the west of the circular building. It consisted of four sections of varying depth (0.41–0.05 m). The difference in depth was caused by a change in geology. The south–western section was cut into limestone and consequently, was shallower than the northern section where it was cut into the sand. Although [0215] produced eight sherds of late Iron Age pottery and had no stratigraphic relationships, it appeared to partially enclose the circular building and so, therefore, has been interpreted as the remnants of its western enclosure ditch. This, however, is unproven.

2.2.4 A small ditch segment ([0243]) was recorded 10 m to the south of an unphased stone structure ([0266]) (see below). This cut a pit ([0253]) which produced middle Iron Age pottery and a bone weaving comb (SF 300) (**Appendix 4**).

2.3 Middle Iron Age features – Area B (Figs 6 and 9)

2.3.1 The archaeology of Area B proved to be too disparate to be fully understood. It was not possible to identify or record the quantity of archaeology interpreted from the geophysical survey. This was probably at least partly due to changes in the geology. However, a cobbled surface, a number of pits and ditches were investigated. These all underlay a mixed layer of sand and subsoil ([0503]) which was removed in spits in a limited area within Area B.

The cobbled surface (Fig 9)

2.3.2 A sub–rectangular area of tightly packed limestone cobbles measuring 6.0 x 4.4 m and consisting of courses four to five thick ([0501]/[0511]) was recorded on the western edge of Area B through which three gullies had been cut in antiquity. The cobbles sat in a shallow depression ([0534]) through which were cut four postholes ([0512], [0513], [0514], [0515]). The cobbles were bounded to the south by remnants of a wall footing ([0516]) measuring 5.2 x 1.9 m. This too had been badly damaged in antiquity.

The pits (Fig 9)

2.3.3 Five pits were located immediately to the north–east of the cobbled surface. [0506] was cut by [0504] which in turn was cut by [0505]. All three had rounded profiles and contained middle Iron Age pottery as did pits [0507] and [0508] located to the south–east. Three more pits ([0502], [0509], [0510]) were located 20 m to the east.

2.3.4 Six pits were recorded in the re-excavated evaluation Trench W ([0519], [0520], [0522], [0523], [0524], [0528], [0535]). [0519] was originally interpreted in 1989 as a butt end of a gully, however, upon re-excavation it was reinterpreted as a poorly preserved pit. [0520] was cut by a shallow gully ([0527]). [0522] cut a gully ([0521]) and was cut by [0535] which also cut [0521]. [0528] was a large (1.4 m diameter x 1 m deep) rubbish pit containing Iron Age pottery and bone.

The gullies and wall footings (Fig 9)

2.3.5 Four gullies ([0521], [0525], [0526], [0527]) were recorded running across Trench W in an east-west orientation. All four were poorly preserved and only [0521] had any stratigraphic relationships (see above). Four metres to the east of Trench W an area 5 x 3 m was excavated in 0.1 m spits. This revealed two clear lines of limestone cobbles ([0529], [0530]/[0531]). These have been interpreted as the remains of wall footings. It was not possible to clearly establish the relationship between [0530] and [0531]. [0529] aligns with gully [0525] in Trench W, as does [0530]/[0531] with [0526]. It was not possible to establish if these were the same features and if so their true extent.

2.4 <u>Late Pre-Roman Iron Age/early Romano-British features - Area A</u> (Fig 10)

The ditches (Figs 10, 12, 13, 14, 15, 16, and 17)

2.4.1 A series of enclosure ditches lay towards the western limits of Area A. Two discontinuous ditches emerged from the northern baulk and ran parallel to one another for c 60 m before turning to the east and west just north of trackway [0238]. A limited sequence of development was recorded at this point (Figs 12, 13 and 14).

2.4.2 Two north-south parallel V-shaped ditches ([0026]/[2] and [0027]/[2]) were found 1.3 m apart. It was not possible to establish a firm relationship between these two ditches. [0026]/[2] subsequently turned to the east to form [0179]/[2] and [0221]. Both ditches were cut by wider U-shaped ditches ([0026]/[1] and [0027]/[1]) both of which turn to the east where [0026] cut [0027] to form ditch [0179]/[0221]. This was a U-shaped ditch which extended eastward for 40 m. It was approximately 1.8 m wide and had an earlier V-shaped cut ([0179]/[2]). On these grounds [0221] was interpreted as the continuation of [0026]/[1] which in turn was preceded by [0027]/[1].

2.4.3 [0178] was a later cut of [0027]. This was a short ditch (c 13 m) running parallel and overlapping the eastern edge of [0027]. It has been interpreted as being contemporary with [0026]/[1] and formed the eastern boundary of a trackway. [0178] was cut away by ditch [0218] which runs off down the slope to the south-west and beyond the limit of excavation. A gully joins [0218] 8 m to the SW of the junction between [0218] and [0178] and then runs north-west for 15 m.

2.4.4 [0026], [0027], [0178] and [0218] contained a number of postholes ([0216], [0259], [0260], [0261], [0262], [0263], [0264]). All seven had the same type of fill and dimensions. Although no structure was apparent it is most likely that these were the remnants of a fence. The original length of this fence is unknown as no further postholes were identified.

then ran off beyond the limit of excavation ([0044] and [0045]) (Figs 15 and 17).

2.4.11 [0032] and [0041] were subsequently cut by a shallow east–west ditch ([0031]) emerging from the baulk (Fig 16). This formed the southern corner of an enclosure along with [0043], [0047], [0048] and [0030]. An entranceway of 1 m was located 2 m to the north of the corner leading onto the north–south trackway formed by [0027], [0026], [0089], [0090], [0028] and [0065] (Figs 15 and 17)

2.4.12 A 6 m length of a U–shaped ditch ([0071]) was located emerging from the northern baulk 4 m to the east of and broadly running parallel to [0065]. This was cut by a shallow pit ([0072]) beyond which it was connected to a 4 m long section of ditch ([0074]) 3 m to the south. The southern terminal of this ditch was very indistinct (Fig 15).

2.4.13 [0006] was an 18.5 m long shallow ditch located 24 m to the east of [0026]. It ran in a north–south orientation from 4 m north of ditch [0221]. It had been cut by pit [0185] at its southern end. [0265] was located 13 m to the north–west of the northern terminal [0006]. This was a 26 m long ditch running in a NE–SW direction. Its width is comparable to that of [0006], however [0265] widens considerably as it crosses from the limestone onto the sand. An excavated segment revealed three subsequent recuts: [0214], [0239], [0240]. At its north–eastern end, [0265] turns to the north and then disappears (Fig 10).

The pits (Fig 18)

2.4.14 Forty–four pits were allocated to the late pre–Roman/early Romano–British period on ceramic grounds. One further pit ([0229]) was allocated to this period as it produced a Roman iron Joiner's dog (SF 257). The majority of these was located to the west of ditch [0006] and [0265]. These were of varying size and profile, however, as they were cut into limestone, they were generally shallow (0.2 – 0.5 m). A few, however, were more substantial. Very few had any stratigraphic relationships to any major features such as the ditches. These pits were generally larger in diameter and shallower than the middle Iron Age pits further to the east. This can be accounted for by the fact that the middle Iron Age pits were dug in sand whilst the rest were dug into solid limestone.

Unphased features (Figs 18 and 19)

2.4.15 An area of c 300 sq m was cleared towards the eastern limits of Area A (within site grid references 33170/95470, 33190/95470, 33170/95490, 33190/95490) revealing a spread of stones within the sand (Fig 18). This was excavated in spits and then planned. On careful examination it was possible to discern the badly damaged footing of a stone structure ([0266]). It lay on a north–east south–west orientation and measured 6 x 5 m. The south–western and south–eastern footings were fairly clear as were the north–western footings. No entranceway or internal features were apparent. It was not possible to establish any cuts for the footings. Two short sections of wall footings were recorded 7 m and 11 m to the north–east. These had no apparent relationships to anything else except that they were on the same orientation as [0266]. A small ill–defined area of cobbles ([0246]) and linear features ([0244], [0245], [0247], [0248]) lay c 10 m to the south.

2.4.16 Both middle Iron Age and early Romano-British pottery and three first century brooches (SF 42, SF 52, SF 91)) were recovered from the mixed sand and subsoil layer in and around these features. However, it was not possible to establish confiodently to which period the stone structure belonged. The fact that this structure was constructed in stone would indicate that an early Romano-British date is more likely. However, it is possible, but unlikely, that this was the stone footing for a middle Iron Age timber building. Middle Iron Age activity in the immediate vicinity this structure was indicated by ditch [0243] and pit [0253] both of which produced middle Iron Age pottery. The ambiguous nature of this evidence is stressed by the weaving comb found in [0253] similar examples of which have been found in both Iron Age and Roman contexts on other sites (**Appendix 4**).

2.4.17 It was not possible to discern any further structures within the stone spread. The spread itself has been interpreted as the rubble of the former stone structure and possibly other structures spread by plough action.

2.4.18 It was not possible to phase the following features on either stratigraphic or ceramic grounds: pits [0091], [0129] and [0133]; postholes [0081], [0121], [0151], [0176], [0191], [0193], [0194], [0195], [0197], [0199]. None of the above postholes formed any meaningful structures.

2.5 Comparison of the results of the geophysical survey and the excavation

2.5.1 The results of the geophysical survey and the excavation were broadly compatible (**Figs 4** and **5**). Both show the trackway ([0021]) running east-west across Area A. They also show the north-south trackway at the western end of [0221] ([0026] and [0027]). The northern end of this trackway and the enclosure ditches in the north-west corner of Area A, however, were beyond limits of the geophysical survey. The excavation revealed a higher density of archaeology (mainly pits) in the western half of Area A. However, the excavation failed to locate a large magnetic anomaly detected immediately to the east of [0026].

2.5.2 There is, however, a number of discrepancies between the excavation and the geophysical survey in the eastern end of Area A. The geophysical survey detected a number of enclosure ditches, pits and possibly up to two round-houses. However, only one circular building and the fragmentary remains of its enclosure were located during the excavation. Although similar features were identified by the geophysical survey they were located approximately 10 metres further east. The geophysical survey failed to clearly identify the possible stone structure and the stone spread. However, due to the indistinct nature of this structure, this is not surprising. The second circular building identified during the geophysical survey lay beyond the eastern limit of excavation of Area A underneath a field road.

2.5.3 There are major discrepancies between the survey and the excavation results in Area B. The geophysical survey detected an extension of the east-west trackway identified in Area A. A series of ditches and pit-like features were also detected to the north of the trackway. The east-west trackway and the majority of the pits proved impossible to locate after stripping. The reasons for this are not entirely clear. It is possible that some of the features detected magnetically were

geological rather than archaeological. A greater allocation of time and resources might have produced clearer answers.

3.0 DISCUSSION

3.1 Introduction

3.1.1 Although the 1991 excavation has provided some additional information into the Iron Age/Romano–British settlement of Hatford Down, it has not been possible to draw many conclusions about the Manorhouse Farm site. This was due to a number of factors. Firstly, there was very little stratigraphy, consequently, the site has been phased on ceramic grounds (**Appendix 2**). This has restricted a meaningful discussion of the site's chronological development. This is a feature common to other open settlements in the Thames Valley (Hingley and Miles 1984, 59). However, the problem was exceptionally acute at Manorhouse Farm. Secondly, the material recovered (artefacts and ecofacts) during the excavation was of a limited range and quality. Finally, due to limited time and resources, it was not possible to understand fully the archaeology that survived.

3.2 Date and length of occupation

3.2.1 The results of the excavation of both Areas A and B indicate that the site was occupied from the later middle Iron Age through to the early part of the second century AD. There is no clear stratigraphical or ceramic evidence to suggest a break in occupation. However, there are distinct contrasts between the pottery assemblages of Areas A and B as well as within Area A.

3.2.2 The circular building, the majority of the pits toward the east of Area A and all the features in Area B produced middle Iron Age pottery. However, with the exception of a few sherds from ditch [0032] and pit [0062], all the excavated features to the west of the circular building produced late Iron Age/early Romano–British pottery. This, along with the indications of late Bronze Age/early Iron Age activity in the immediate area and the presence of ten unstratified third and fourth century AD coins, suggests that although there was fairly continuous occupation of Hatford Down from the late Bronze Age the settlement pattern was probably fairly fluid with consequent shifts of focus (**Appendix 2**).

3.3 Middle Iron Age

3.3.1 The circular building falls into the second category of Thames Valley house types, ie 'ring groove or trench built' as defined by Allen et al (Allen et al 1984, 91). It is possible that the ditches formed a 'drip gully' rather than a foundation trench. However, it has a smaller diameter (9.2 m) than most other Upper Thames Valley examples (eg Ashville, Mount Farm, Farmoor, Claydon Pike, Mingies Ditch, Watkins Farm; ibid, Figs. 6.4, 6.6, 6.7 and 6.8; Allen 1990, 12–14). If the pennanular ditches were a drip gully, the circular building would have been exceptionally small. There was no evidence for an internal

post–ring supporting the roof. There was, however, a post–hole excavated in the southern ditch section which is suggestive of the remnants of a wall. Finally, the site lies on free–draining sand and limestone thereby making the need for a drip–gully unlikely. For these reasons it was interpreted as a foundation trench.

3.3.2 The circular building appears to posses only one phase of construction. The ditches contained one fill and there was no evidence of any re–cuts. This is suggestive of a short period of occupation, possibly as short as a decade or so (Allen 1990, 73). Apart from three pits containing domestic debris there was no evidence of any internal features such as a hearth. Although there is no definate evidence of an entranceway, the south–easterly gap faces away from the prevailing westerly wind, a feature common to many sites in the Upper Thames Valley (Hingley and Miles 1984, 63).

3.3.3 Unfortunately, it is not possible to have a particularly meaningful discussion of the remaining Iron Age features. The archaeology revealed in Area B belonged exclusively to the Iron Age period, it was not possible to establish a coherent plan. Although the cobbled surface was associated with four post–holes, it did not appear to form part of a structure. It is possible that this surface was the badly damaged floor of a rectangular structure such as Harding suggested at Whittenham Clumps and at Longford Down (Harding 1972, 33–35, Fig. 5). Both structures, however, were very tentative and also earlier (5th century B.C.) than at Amorphous Farm. On the present evidence, the cobbled surface is more likely to have been a yard than an internal floor surface.

3.3.4 The remaining middle Iron Age features in both Area A and B were mainly pits containing occupation debris. The lack of botanical remains (ie grain) suggests that these pits were used as rubbish dumps rather than for storage. They form no apparent pattern except that they are exclusively cut into sand rather than limestone. They also differ from the pits cut into limestone in that they are all deeper and contain Iron Age pottery. The difference in size is explained simply by the ease of digging into sand rather than solid rock.

3.4 Late Iron Age/early Romano–British occupation

3.4.1 A possible small unphased rectangular stone structure lay within a stone spread c 15 m to the north–east of the circular building. It was impossible to identify the original layout of this structure except that it was roughly rectangular, the south–western end was wider than the north–eastern end, and that there was a sizeable gap (3 m) in the northern wall. No internal features or divisions were apparent. The structure had obviously been badly damaged by ploughing. The stone spread within which it was located was most likely to have been the remains of the rest of the building. As stated above, both middle Iron Age pottery (130 sherds) and early Romano–British pottery (352 sherds) were recovered from the mixed sand and subsoil within which it was located. This has prevented any close dating. However, on balance this structure is most likely to have been early Romano–British (see above). The function of this structure is unclear, the large quantity of pottery (compared to the rest of the site) and other domestic debris (ie the brooches and the bone weaving comb) suggest that it could have been a small dwelling. It is possible that it was originally part of a

of the Thames, was extensively cleared by the Iron Age and Roman periods (Miles 1986, 20–21).

3.6 Economy and status

3.6.1 Due to the problems of establishing the chronological development of the Manorhouse Farm site outlined above, the following discussion will be of a general nature and applies to both the middle Iron Age and late Iron Age/early Romano–British periods.

3.6.2 The economy of the settlement is broadly comparable to many other sites in the Upper Thames Valley. That is, it was a mixed subsistence economy probably favouring arable rather than pastoral farming. The botanical evidence was unfortunately very poor (although there was a good sample size very little material was recovered). However, the pits sampled produced chaff rather than pure processed grain, indicative of the disposal of crop processing debris rather than the storage of grain. The weed seeds recorded, although very low in quantity, are also consistent with the later stages of crop processing. It was not possible to identify the type and the relative importance of the crops grown and consumed at Manorhouse Farm.

3.6.3 As with the environmental evidence, the small size of the animal bone assemblage has limited the scope of the discussion of the faunal remains (**Appendix 6**). Having said that, it has been possible to come to some conclusions on the economy of Hatford Down.

3.6.4 The assemblage comprised of domestic waste, largely made up of secondary residues relocated from primary dumps elsewhere in the settlement undetected during the excavation. Sheep, the most common livestock (60%), appear to have been bred for meat below an optimal level. The reason for this was that grazing land was possibly was under pressure from the expansion of arable cultivation noted elsewhere in the Upper Thames Valley (Lambrick 1992, 94, 99). Although forming only 20% of the assemblage, cattle would have been the largest bulk meat supply for the settlement. The mortality rates and pathological abnormalities noted in the assemblage imply that cattle also had a significant traction role. Pigs also appear to have been bred for their meat. Dogs and horses were also present but in relatively low numbers with the horses presumably being kept as mounts and for light transportation traction. The diet was supplemented by goats milk and eggs from a small quantity of domestic fowl. The relative species frequencies are comparable with Upper Thames Valley sites such as Ashville, and Guiting Power, but differs from Appleford, Farmoor and City Farm (Wilson 1978, 136). It is not wise to draw too many conclusions about the similarities or dissimilarities with the above sites as they are located on the gravel terraces and floodplain of the Thames and, therefore, would have been in a wetter environment. However, the faunal assemblage broadly agrees with the general patterns observed in the Upper Thames Valley (Lambrick 1992).

3.6.5 The mortality rates indicate that there was local subsistence based production with an element of marketing activity as indicated by the absence of very old individuals of ovicaprines and cattle. Presumably there was some importation of new breeding stock, an activity which is invisible in the assemblage. Although slight differences were observed in the assemblage, there appears to have been very little or no change in the economy between the middle Iron Age and late Iron Age/early

Romano–British periods.

3.6.6 The ceramic evidence also indicates that Manorhouse Farm had a very limited economy, that is, it had very restricted trade beyond the immediate locality (**Appendix 2**). The presence of the coins (**Appendix 4**) could be taken as being indicative of a low level of integration with the local market economy such as at Barton Court Farm (Miles 1986, 45). However, with the exception of the two late Iron Age coins, all the Roman coins date to the third and fourth century and were unstratified. On the present evidence these coins relate to later Romano–British activity located elsewhere. The two late Iron Age coins were most likely to have had a function other than exchange (**Appendix 4**). There was a complete lack of other economic indicators such as loomweights.

3.6.7 Both the ceramic and faunal assemblages indicate that Amorphous Farm was a low status site with limited trading connections and local mixed subsistence based production. The paucity of metalwork and other 'exotic' artefacts adds weight to this conclusion.

3.7 The archaeology of Hatford Down

3.7.1 As stated in the introduction, Hatford Down is considered to be of high archaeological potential. The 1991 excavation site lies approximately 300 metres to the west of an extensive Iron Age settlement (NGR SU 3350 9528; PRN 7570, 9728, 13565, 13568). By 1991 the vast majority of the settlement had been completely destroyed by sand quarrying on both sides of Sandy Lane.

3.7.2 The site has been examined to a limited extent and reported upon on a number of occasions. Hatford is referred to in the 'Notes and News' section of Oxoniensia a number of times between 1939 and 1959 (1939, 196; 1940, 162; 1941, 88; 1943–4, 197; 1951, 80, 1959, 100) and was visited by both J S P Bradford and D Riley in 1942 (Bradford 1942, 60; Riley 1942, 113; Harding 1972, 141). A number of features (mainly pits) were recorded to the west of Sandy Lane and mainly early Iron Age material (eg pottery, a bone needle and a bone weaving comb) was collected.

3.7.3 Further observations of the settlement on Hatford Down were made by a Mr Henry in 1959. On this occasion an unspecified number of pits were noted and some unstratified Iron Age and a bone needle were recovered (Oxfordshire Sites and Monuments PRN 7570; Hingley, unpublished).

3.7.4 In 1970 Mr L Bishop excavated "a series of shallow pits and ditches, some blackened or burnt areas, at least four extended inhumations without grave goods and part of a building..." (Oxfordshire Sites and Monuments Records PRN 9728). It appears that an unspecified quantity of early Iron Age and Belgic material was recovered from some of the pits as well as a quantity of unstratified Romano–British pottery.

3.7.5 In 1980 while observing the continued destruction of the site by mineral extraction Hingley recorded approximately 100 features and excavated ten of the features. The analysis of the ceramics recovered from these excavations indicated that two of the features were of early

Iron Age date, six were of middle Iron Age date and one was of Romano–British date. As very little of the site had survived further detailed work was considered to be unjustified (Hingley, unpublished). The features recorded, gullies, pits and a possible round–house, were not particularly dense and consequently were considered to be on the periphery of a larger multi–period settlement (Hingley, pers comm).

3.7.6 The results of the 1991 season of excavation conform to the observations made about the former settlement on Hatford Down. That is, the Down appears to have been continuously occupied from the late Bronze Age/early Iron Age through to the early part of the second century AD. Unfortunately, as with Hingley's work in 1980, the 1991 excavation investigated a peripheral area of what must have been an extensive settlement.

3.7.7 Based on the observations made by Riley, and Bradford and the 'excavation' undertaken by Bishop, the core of this settlement would appear to have been c 200m east of the 1991 excavation both east and west of Sandy Lane (Fig 22). The majority of the settlement has been destroyed with little or no archaeological work being undertaken, consequently, its true nature and place within the late prehistory of the Upper Thames Valley will never be known. However, it has been possible to come to some interesting conclusions.

3.7.8 On the evidence from the 1989 evaluation, the 1991 excavation and from inferences from the earlier work on Hatford Down it would appear that the settlement was of a low status and had a mixed subsistence economy. It also had a sequence of continuous occupation from the late Bronze Age to the early second century A.D during which time the settlement focus was probably fairly fluid. The presumed large size of the settlement is likely to have been a product of it 'wandering' across the Down over a period of time (Fig 22). This settlement movement has been noted on other Upper Thames Valley sites such as Farmoor (Lambrick and Robinson 1979, fig. 34), Ashville (Parrington 1978, 31–38), Mingies Ditch, Gravelly Guy (Allen 1992, 79), Old Shifford (Appendix 2), Kingston Bagpuize and Frilford (Hingley, pers comm).

3.7.9 Another feature Hatford has in common with many other Upper Thames Valley sites is settlement dislocation occurring in the late pre–Roman Iron Age/early Romano–British period. At Hatford the ceramic evidence points towards this happening in the early part of the second century AD (Appendix 2). At Watkins Farm and Farmoor this dislocation occurs just before the Roman Conquest (Raven 1990, 49: Lambrick and Robinson 1979, 72) whereas at Old Shifford, Gravelly Guy, Claydon Pike, Thornhill Farm (Fairford), and possibly The Vineyard (Abingdon) the dislocation occurs approximately at the same as at Hatford in the early–mid second century AD (Lambrick 1992, 83; Appendix 2).

3.7.10 So where did the occupants of Hatford Down go? Later activity on the site is indicated by the ten third and fourth century AD coins. None of these was stratified and do not directly relate to any recorded features in the 1991 excavation. However, as stated in the introduction, a substantial stone structure, thought to be a villa, was found during fieldwalking on the southern bank of Frogmore Brook opposite Hatford Down (Fig 2). Large quantities of second to fourth century AD pottery was picked up (CBA Group 9 Newsletter 7). As this 'villa'

was first occupied at approximately the same time as the early Romano–British occupation was abandoned, it is possible that this represents the third phase of the settlement of Hatford Down.

3.7.11 One of the aims of the 1991 season of excavation was to try to redress the imbalance of understanding between the archaeology of the gravels and the valley slopes of the Upper Thames Valley as noted by Lambrick (1992, 79). Unfortunately, due to the peripheral nature of the archaeology encountered it has not been possible to do this aim justice. However, the excavation has at the very least shown the potential of the sites located on the Corallian Ridge. Other 'open' settlement complexes are known at Cherbury (Hingley, unpublished) and at Frilford (Bradford and Goodchild 1939: Hingley, pers comm) as well as four defended enclosures (Tingle 1991, 46–7, fig. 3.1) are known on the Corallian Ridge. The Hatford Down settlement has gone some way in shedding light in the development of the Iron Age on the Ridge. However, the extensive destruction by mineral extraction of this site has thwarted a prime opportunity to gain a fuller understanding of the southern slopes of the Upper Thames Valley. In conclusion I can only reiterate the words of R. Hingley (unpublished):

> "It is hoped that any future threats to Iron Age (and Romano–British) sites on the Corallian Ridge will be accompanied by more thorough examination of the sites concerned" (before extensive destruction takes place).
>
> (additions by the author)

BIBLIOGRAPHY

Allen T G 1990: An Iron Age and Romano-British enclosed settlement at Watkins Farm Northmoor Oxon. Oxford University Committee for Archaeology

Allen T G, Miles D and Palmer S 1984: 'Iron Age buildings in the Upper Thames region' in Aspects of the Iron Age in central southern Britain (eds B W Cunliffe and D Miles) 89–101 Oxford

Andrews A H and Noddle B A 1975: 'The absence of premolar teeth from ruminant mandibles found at archaeological sites' Journal of Archaeological Science 2 137–144

Baker J and Brothwell D 1980: Animal diseases in archaeology London: Duckworth

Dannell G 1977: 'The samian from Bagendon' in Roman pottery studies in Britain in Britain and beyond (eds J Dore and K Greene) Brit Archaeol Rep Supplementary Series 30 229–234

Binford L R 1981: Bones: Ancient Men and modern myths. London: Academic Press

Boessneck J 1969: 'Osteological differences between sheep and goats' Science in Archaeology (eds D. Brothwell and E S Higgs) 2nd edition 331–358 Thames and Hudson

Bradford J S P and Goodchild R G 1939: 'Excavations at Frilford, 1937–8' Oxoniensia 4 1–70 Oxford

Bull G and Payne S 1982: 'Tooth eruption and epiphyseal fusion in pigs and wild boar' Ageing and sexing animal bones (eds R Wilson, C Grigson and S Payne). Brit Archeol Rep British Series 109 55–71 Oxford

CBA 1977: Group 9 newsletter 7

De Roche C D 1978: 'The Iron Age pottery' in The excavation of an Iron Age settlement, Bronze Age ring-ditches and Roman features at Ashville Trading Estate, Abnigdon (Oxfordshire) 1974–76 Counc Brit Archaeol Res Rep 28 40–74

Dreisch A von den and Boessneck J 1974: 'Kritische anmerkungen zur widerristhohenberechung aus langenmassen vor und fruhgeschiichtlichen tierknocken' Saugetierkunliche Mitteilungen 22 (4) 325–348

Dreisch A von den 1976: A guide to the measurement of animal bone from archaeological sites Peabody Museum Bulletin 1 Harvard

Ellis A E 1962: British freshwater bivalves Synopses of the British fauna 13 Linnean Society: London

Evans J G 1972: Land Snails in Archaeology: with special reference to the British Isles Seminar Press: London

Frere S S 1964: 'Excavations at Dorchester on Thames 1962' Archaeol J 119 (for 1962) 114–149

Grant A 1975: 'The animal bones' in Excavations at Porchester Castle, Volume 1,

Roman (B Cunliffe). 378–408; 437–450 Reports of the Research Committee of the Society of Antiquaries 32: London

Grant A 1982: 'The use of the tooth wear guide to the age of domestic ungulates' in Ageing and sexing animal bones from archaeological sites (eds R Wilson, C Grigson and S Payne) Brit Archaeol Rep Series 109 91–108 Oxford

Grant A 1984: 'Animal husbandry in Wessex and the Thames Valley' Aspects of the Iron Age in central southern Britain (eds B Cunliffe and D Miles) 102–119 Oxford

Grimes W F 1943–4: 'Excavations at Stanton Harcourt, Oxon' Oxoniensia 8 and 9 19–63

Halstead P 1985: 'A study of mandibular teeth from Romano–British contexts at Maxey' Archaeology and the environment in the Lower Welland Valley (eds F Prior, C French, D Crowther, D Gurney, G Simpson and M Taylor) East Anglia Archeol Rep 27 219–223

Harcourt R A 1974: 'The dog in prehistoric and early historic Britain' Journal of Archeol science 1 (2) 151–175

Harding D W 1972: The Iron Age in the Upper Thames Basin Clarendon Press: Oxford

Hawkes C 1930: Report on the pottery in Myres 1930, 377–381

Hingley R 1980: An Iron Age and Romano–British Settlement on Hatford Down, Hatford (Oxfordshire). Unpublished manuscript

Hingley R and Miles D 1984: 'Aspects of Iron Age settlement in the Upper Thames' in Aspects of the Iron Age in central southern Britain (eds B Cunliffe and D Miles) 52–71 Oxford

Hodder I 1974: 'The distribution of Savernake ware.' Wiltshire Archaeol and Nat Hist Magazine 69 67–84

Jarvis M G 1973: Soils of the Wantage and Abingdon district Harpenden

Kerney M P 1968a: 'Field meeting to Leicestershire, 27th April 1968' Conchologists Newsletter 27 72–73

Kerney M P 1968b: 'Britain's fauna of land mollusca and its relation to the Post–Glacial thermal optimum' Symposium of the Zoological Society of London 22 273–291

Kerney M P 1976: Atlas of the non–marine mollusca of the British Isles Conchological Society of Great Britain and Ireland: Natural Environment Council: Cambridge

Kerney M P and Cameron R A D 1979: A field guide to the land snails of Britain and North–West Europe. Collis: London

Lambrick G 1979: 'The Iron Age pottery.' Iron Age and Roman riverside settlements at Farmoor, Oxfordshire. (eds G Lambrick and M Robinson) Counc Brit Archaeol Res Rep 32 35–46

Lambrick G 1984: 'Pitfalls and possibilities in Iron Age pottery studies – experiences

in the Upper Thames Valley' in Aspects of the Iron Age in Central Southern Britain (eds B Cunliffe and D Miles) Oxford Univ Committee for Archaeol Monograph 2 162–177

Lambrick G 1992: 'The development of late prehistoric and Roman farming on the Thames gravels' Developing landscapes of lowland Britain. The archaeology of the British gravels: A Review (eds M Fulford and E Nichols) 78–105 Society of Antiquaries: London

Lane–Fox A H 1869: 'Further remarks on the hill forts of Sussex: being an account of excavations in the forts at Cissbury and Highdown' Archaeologia 42 53–76

Levene M 1982: 'The use of crown height measurements and eruption – wear sequences to age horse teeth' Ageing and sexing animal bones from archaeological (eds R Wilson, C Grigson and S Payne) Brit Archeol Series Rep 109 223–250 Oxford

MacGregor A 1985: Bone, antler, ivory and horn. Croom Helm

Miles D 1982: 'Confusion in the countryside: Some comments from the Upper Thames region' in The Romano–British countryside: Studies in rural settlement and economy (ed D Miles) Brit Archaeol Series Rep 103 53–80 Oxford

Miles D 1986: Archaelogy af Barton Court Farm, Abingdon, Oxon CBA Research Report 50

Myres J N L 1930: 'A prehistoric settlement on Hinksey Hill, near Oxford' J Brit Archaeol Assoc 36 360–390

Oxoniensia 1939: 'Notes and news' Oxoniensia 4 196 Oxford

Oxoniensia 1941: 'Notes and news' Oxoniensia 6 88 Oxford

Oxoniensia 1942: 'Notes and News' Oxoniensia 7 103 Oxford

Oxoniensia 1951: 'Notes and news' Oxoniensia 16 80 Oxford

Oxoniensia 1959: 'Notes and news' Oxoniensia 24 100 Oxford

Payne S 1973: 'Kill off patterns in sheep and goats: the mandibles from Aswan Kale' Anatolian Studies 23 281–303

Payne S 1985: 'Morphological distinctions between the mandibular cheek teeth of young sheep, Ovis, and goats' Journal of Archaeological Science 14 609–614

Raven S 1990: 'The Romano–British pottery' in An Iron Age and Romano–British enclosed settlement at Watkins Farm, Northmoor, Oxon T G Allen Oxford University committee for Archaeology 46–50

Rigby V 1988: 'Gallo–Belgic wares' in Trow 1988 60–63

Robinson M 1984: 'Landscape and environment of central southern Britain' Aspects of the Iron Age in central southern Britain (eds B Cunliffe and D Miles) 1–11 Oxford

Robinson M and Wilson R 1987: 'A survey of environmental archaeology in the South Midlands' Environmental archaeology: A regional review Vol II (ed H

C M Keeley) 16–100 HBMC(E) occasional paper 2

Silver I A 1969: 'The ageing of domestic animals'. Science in archaeology (eds D Brothwell and E Higgs) 283–302 Thames and Hudson London

Swan V G 1975: 'all reconsidered and the origins of Savernake ware in Wiltshire' Britannia 6 36–61

Timby J 1992: Old Shifford Farm, Oxfordshire, the pottery Unpublished archive report for OAU

Timby J 1993: Abingdon Vineyard, pottery report Unpublished archive report for OAU

Tingle M 1991: The Vale of the White Horse survey: The study of a changing landscape in the clay lowlands of southern England from prehistory to the present. Brit Archaeol Series Rep 218 Oxford

Trow S D 1988: 'Excavations at Ditches hillfort, North Cerney, Gloucestershire, 1982–3.' Trans Bristol and Gloucestershire Archaeol Soc 106 19–85

Trow–Smith R 1957: A history of British livestock husbandry to 1700 Routledge and Keegan–Paul London

Wild J P 1970: Textile manufacture in northern Roman provinces Cambridge University Press

Williams A 1946–7: ' Excavations at Langford Downs, Oxon. (near Lechlade) in 1943' Oxoniensia 11 and 12 44–64

Wilson D 1993: 'Iron Age pottery.' The prehistoric landscape and Iron Age enclosed setlement at Mingies Ditch, Harwick–with–Yelford, Oxon Oxford Archaeological Unit Thames Valley Landscapes: the Windrush Valley Vol 2 70–75

Wilson M G 1984: 'The pottery.' in S S Frere, Excavations at Dorchester on Thames, 1963 Archaeol J 141 91–174 (155–172)

Wilson R 1978: 'The animal bones' in The excavation of an Iron Age settlement, Bronze Age ring ditches, and Roman features at Ashville Trading Estate, Abingdon (Oxfordshire), 1974–76 (M Parrington) CBA Research Report 28 110–113 London

Wilson R 1979: 'The vertebrates' Iron Age and Romano–Britsh riverside settlements at Farmoor, Oxfordshire CBA Research Report 32 London

Wilson R 1984: 'The faunal remains' in Archaeology at Barton Court Farm, Abingdon, Oxon (ed D Miles) Microfiche chapter IV CBA Research Report 50 London

Wilson R and Allison E 1991: 'The animal and fish bones' in An Iron Age and Romano–British enclosed settlement at Watkins Farm Northmoor Oxon (T G Allen) 57–61 Oxford

Young C J 1977: Oxfordshire Roman Pottery Brit Archaeol Rep British Series 43 Oxford

FIGURES

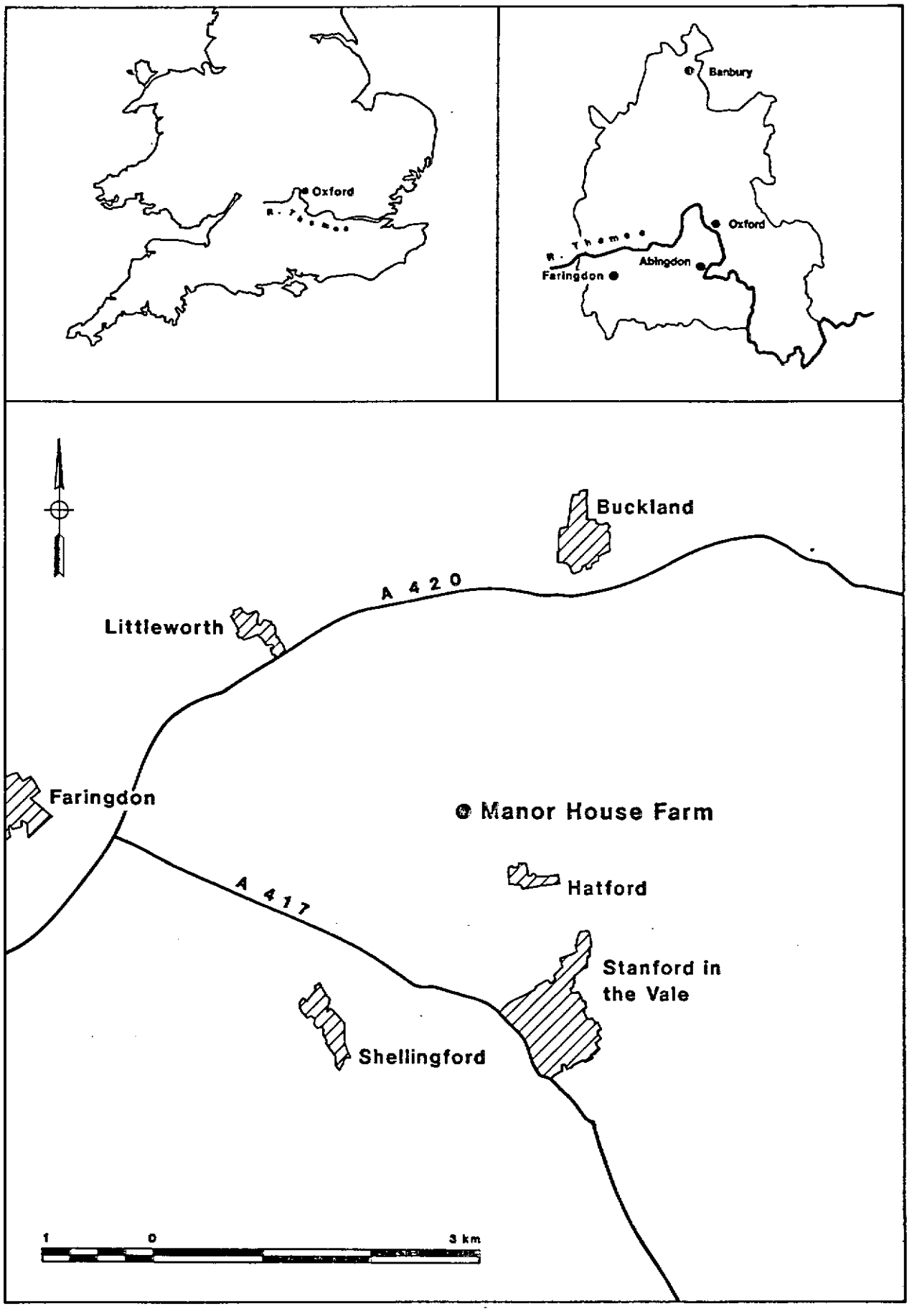


Figure 1 Site location

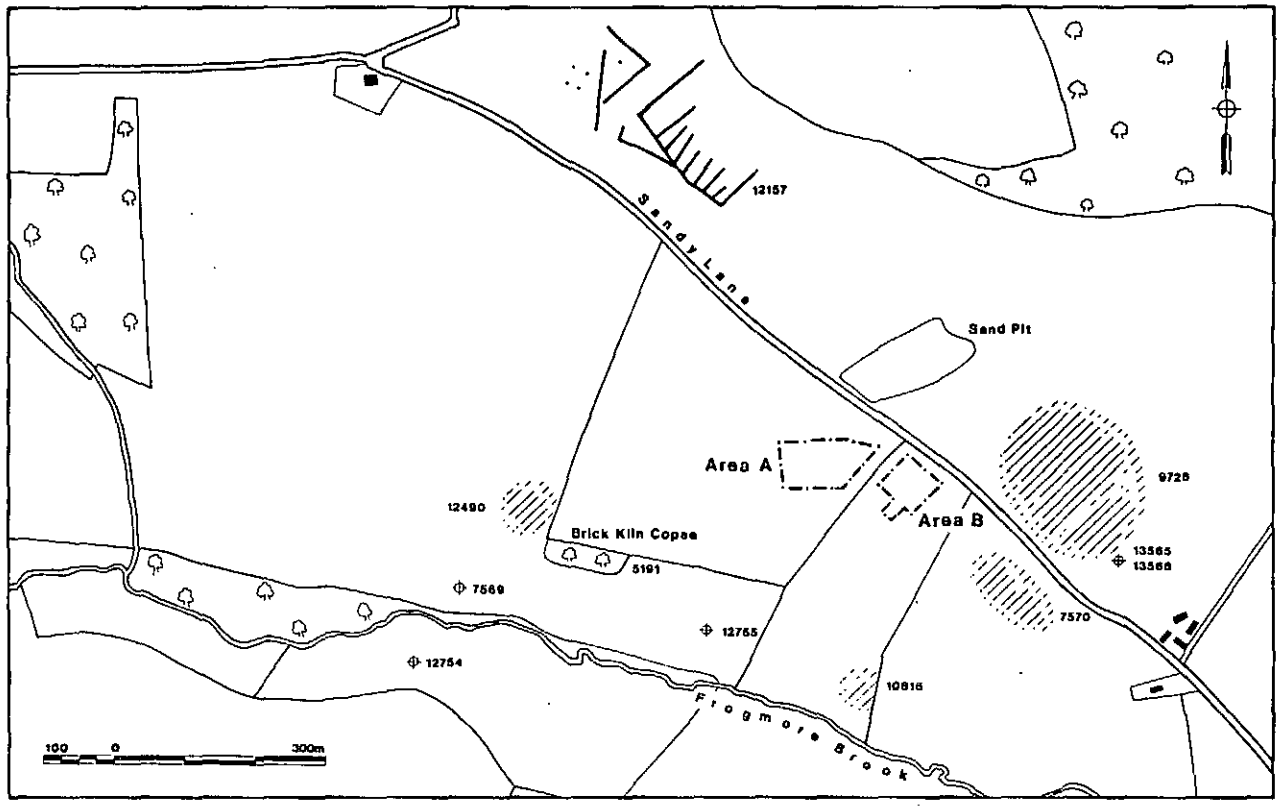


Figure 2 Site location in relation to the archaeology of Hatford Down

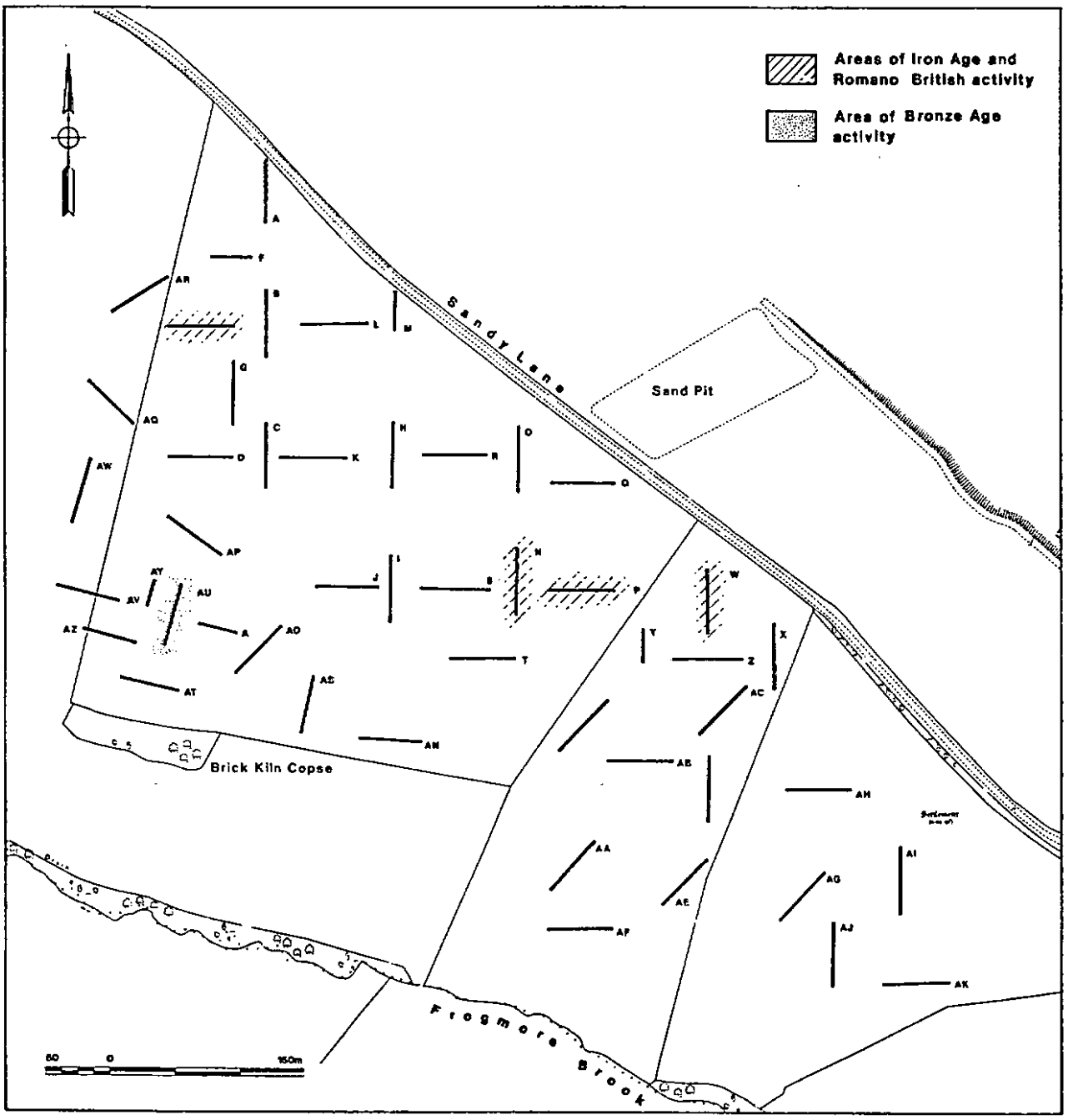


Figure 3 Plan of evaluation trenches showing areas of archaeological activity

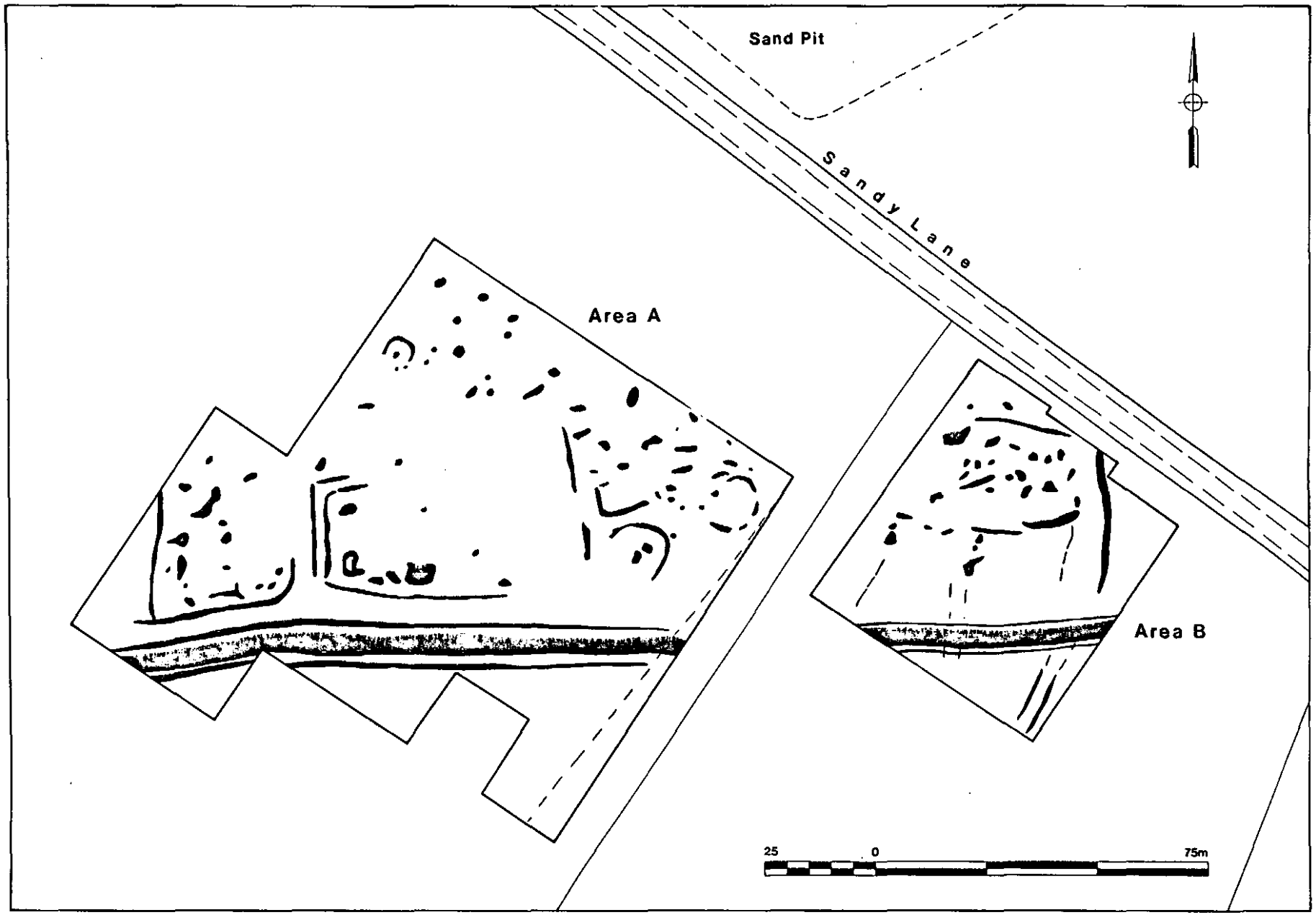


Figure 4 The results of the geophysical survey

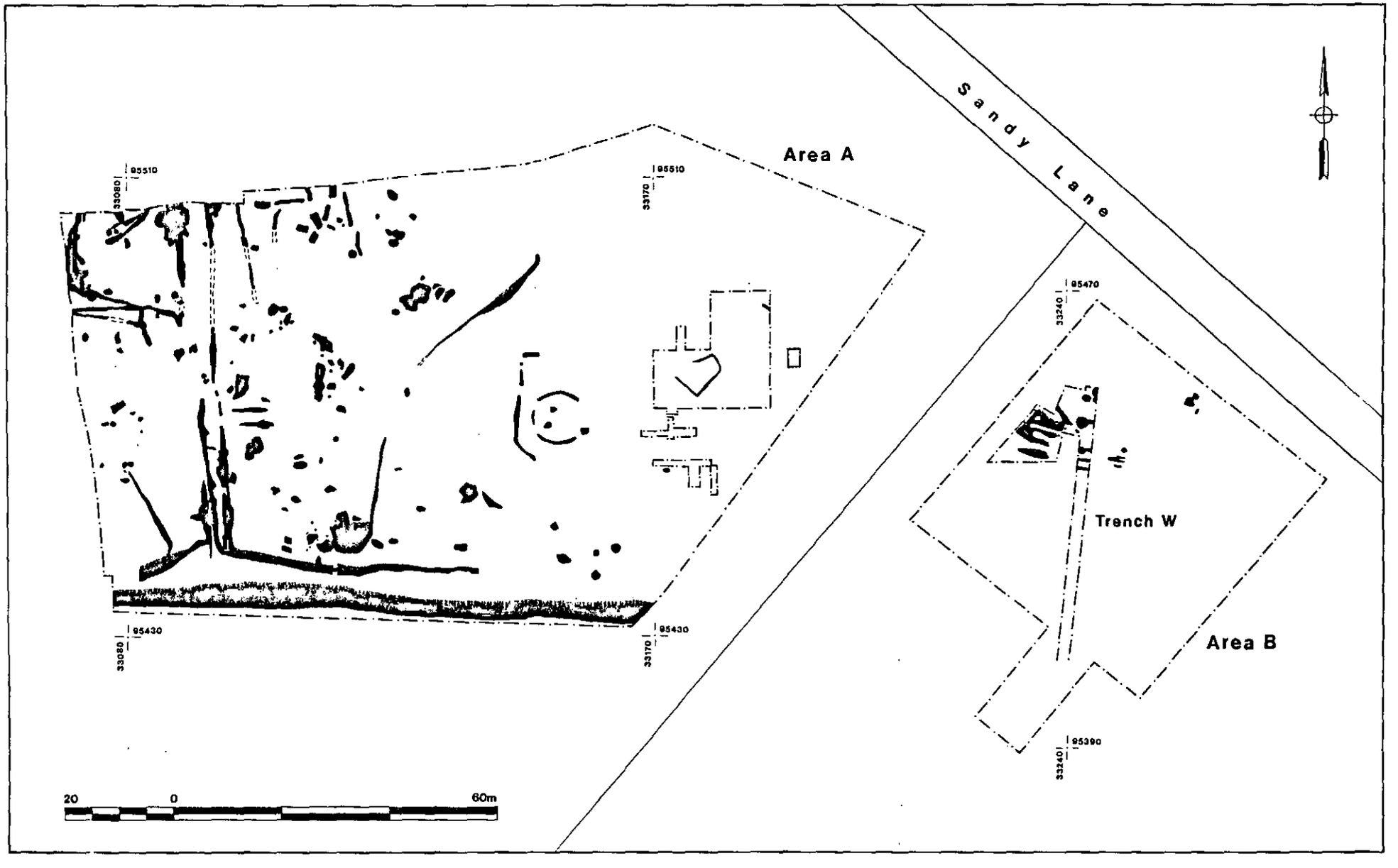


Figure 5 Plan of archaeological features in Areas A and B

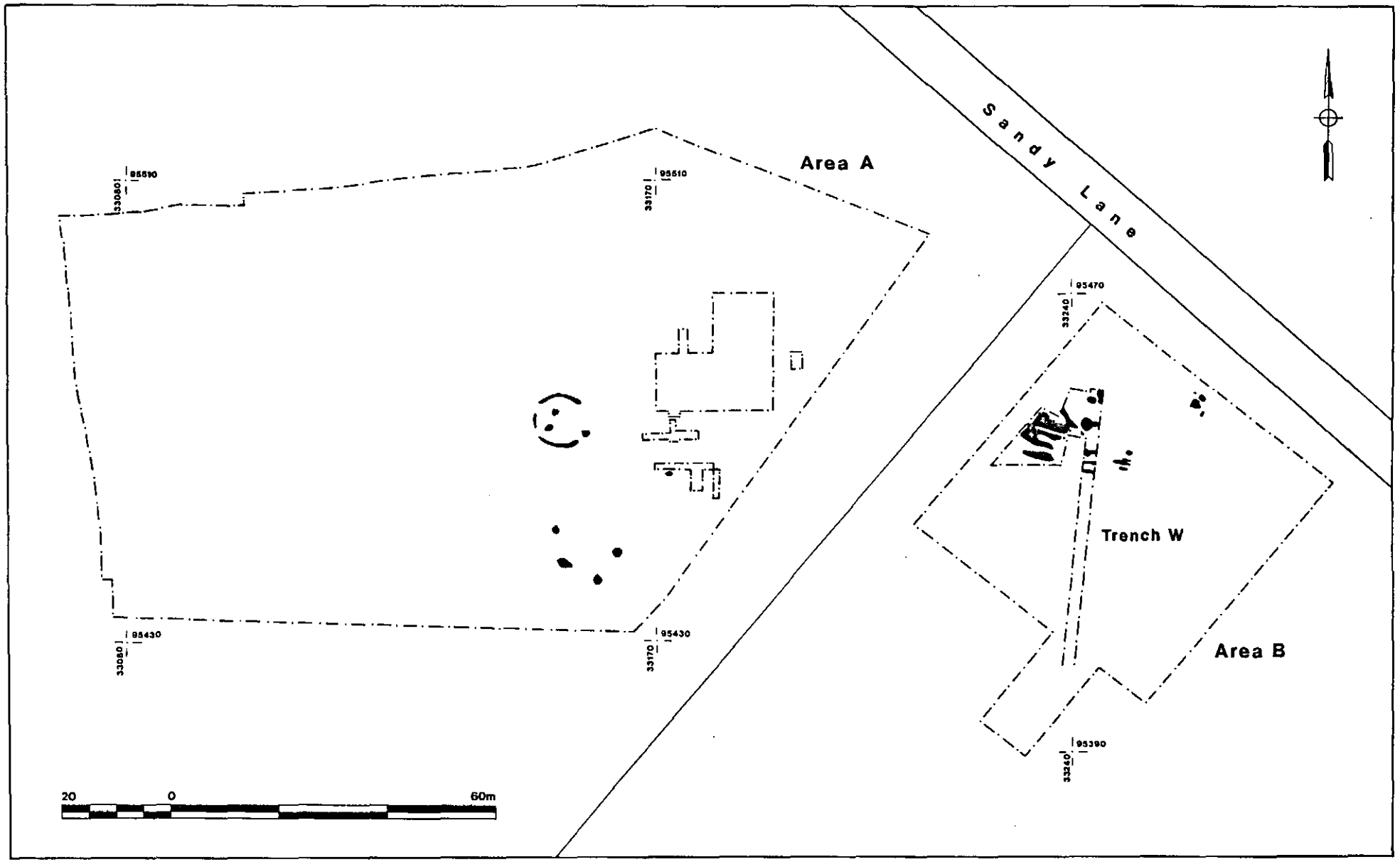


Figure 6 Middle Iron Age features in Areas A and B

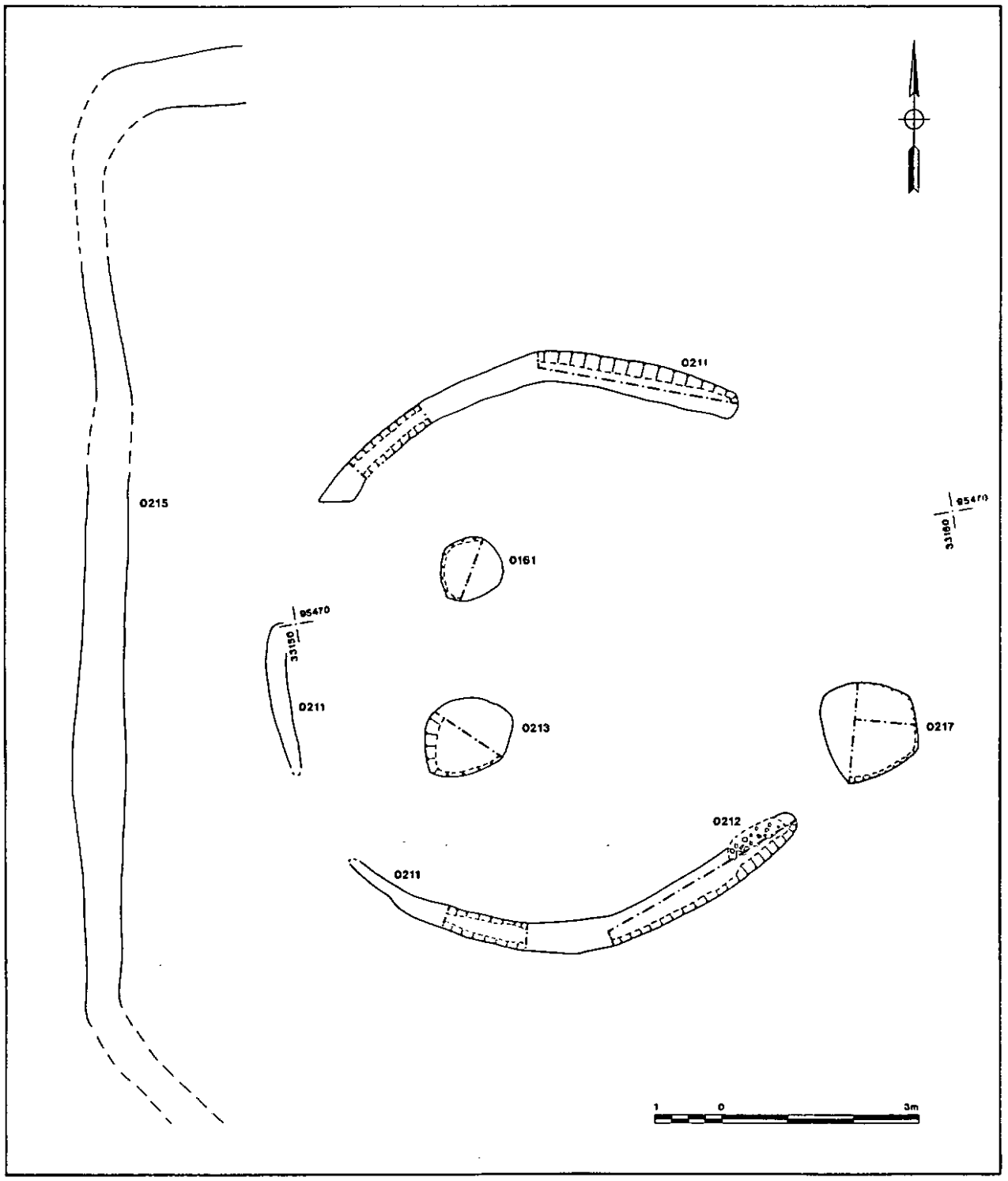


Figure 7 The circular building, associated pits and ditches

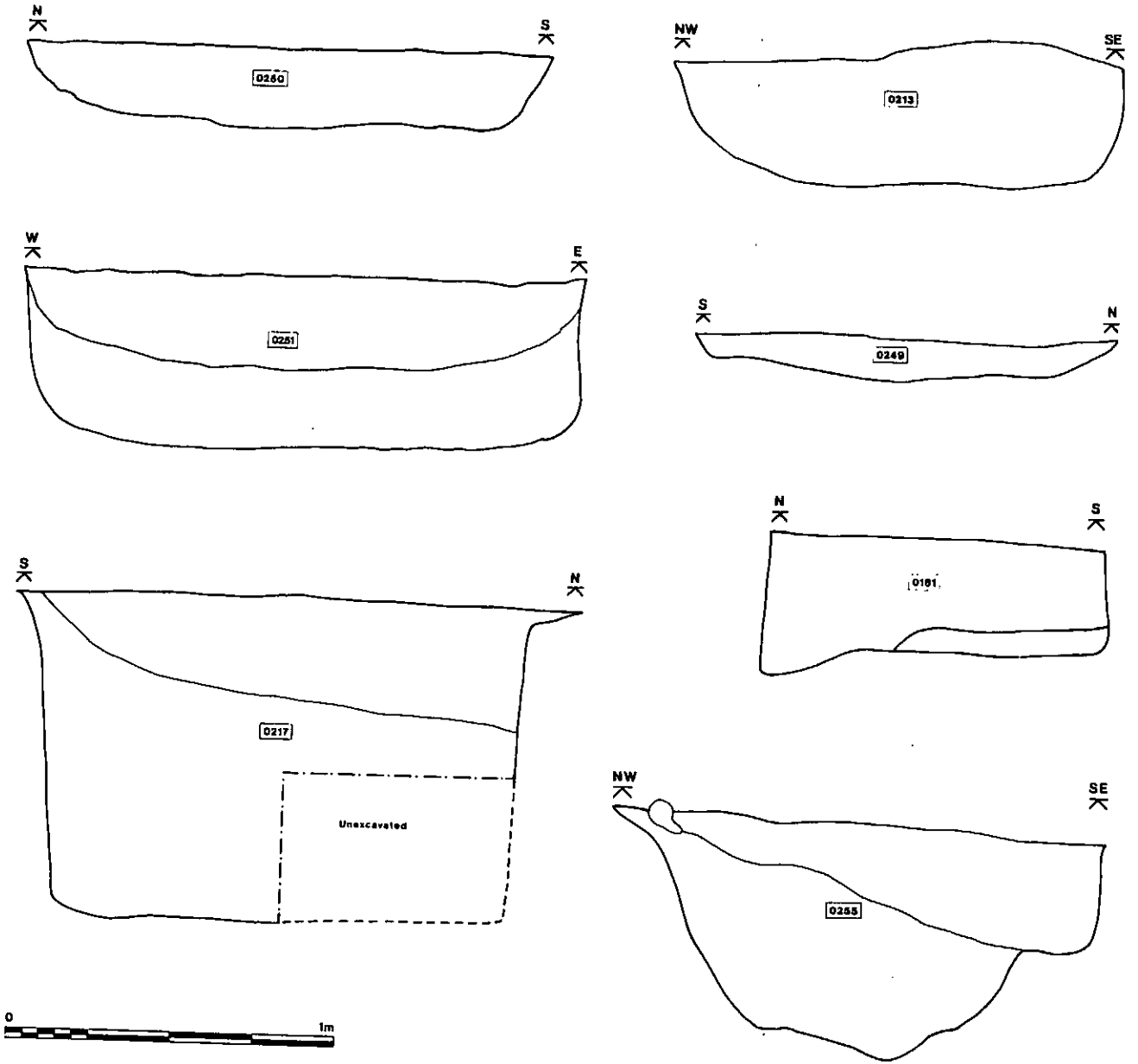


Figure 8 Middle Iron Age pit profiles

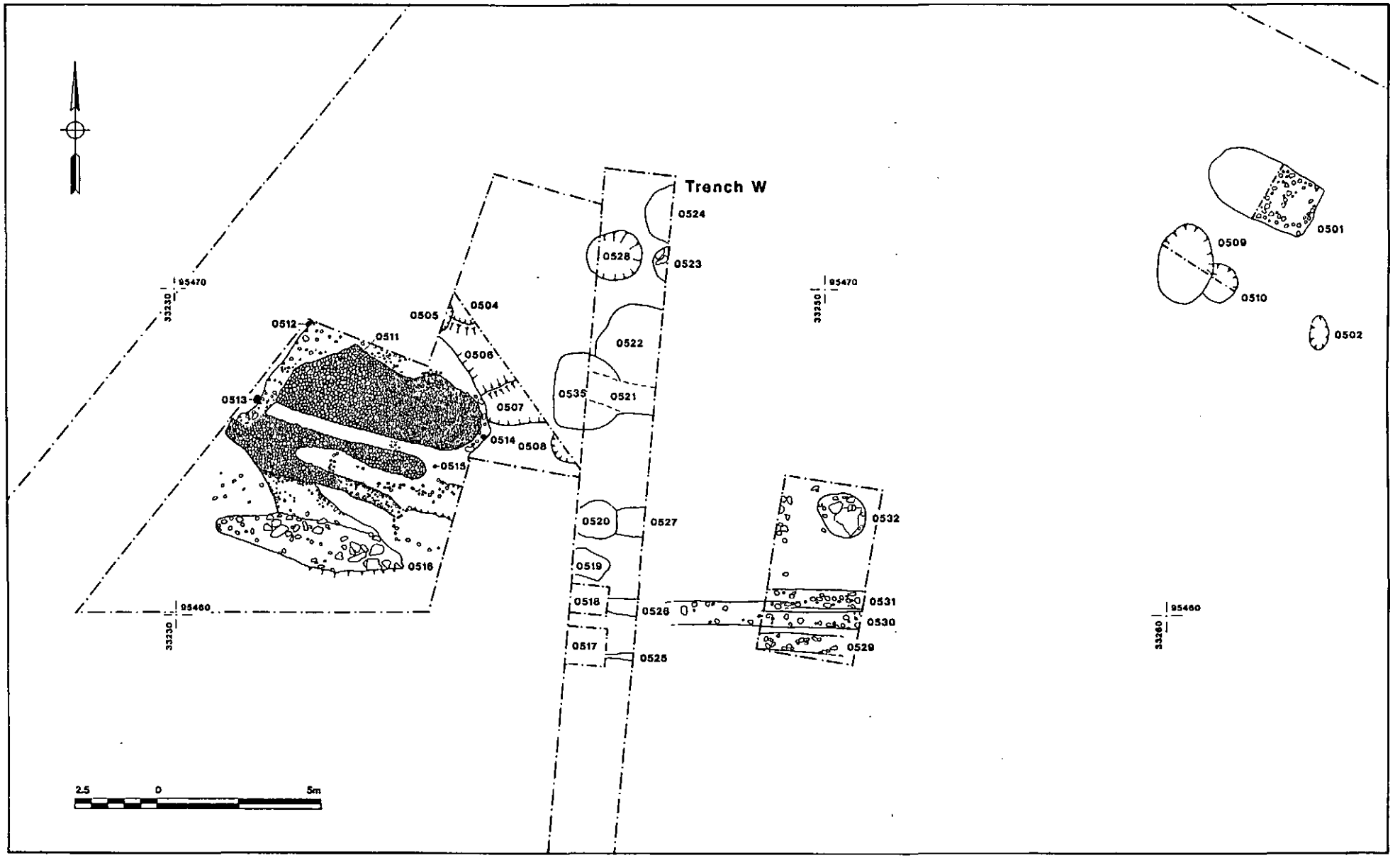


Figure 9 Middle Iron Age features in Area B

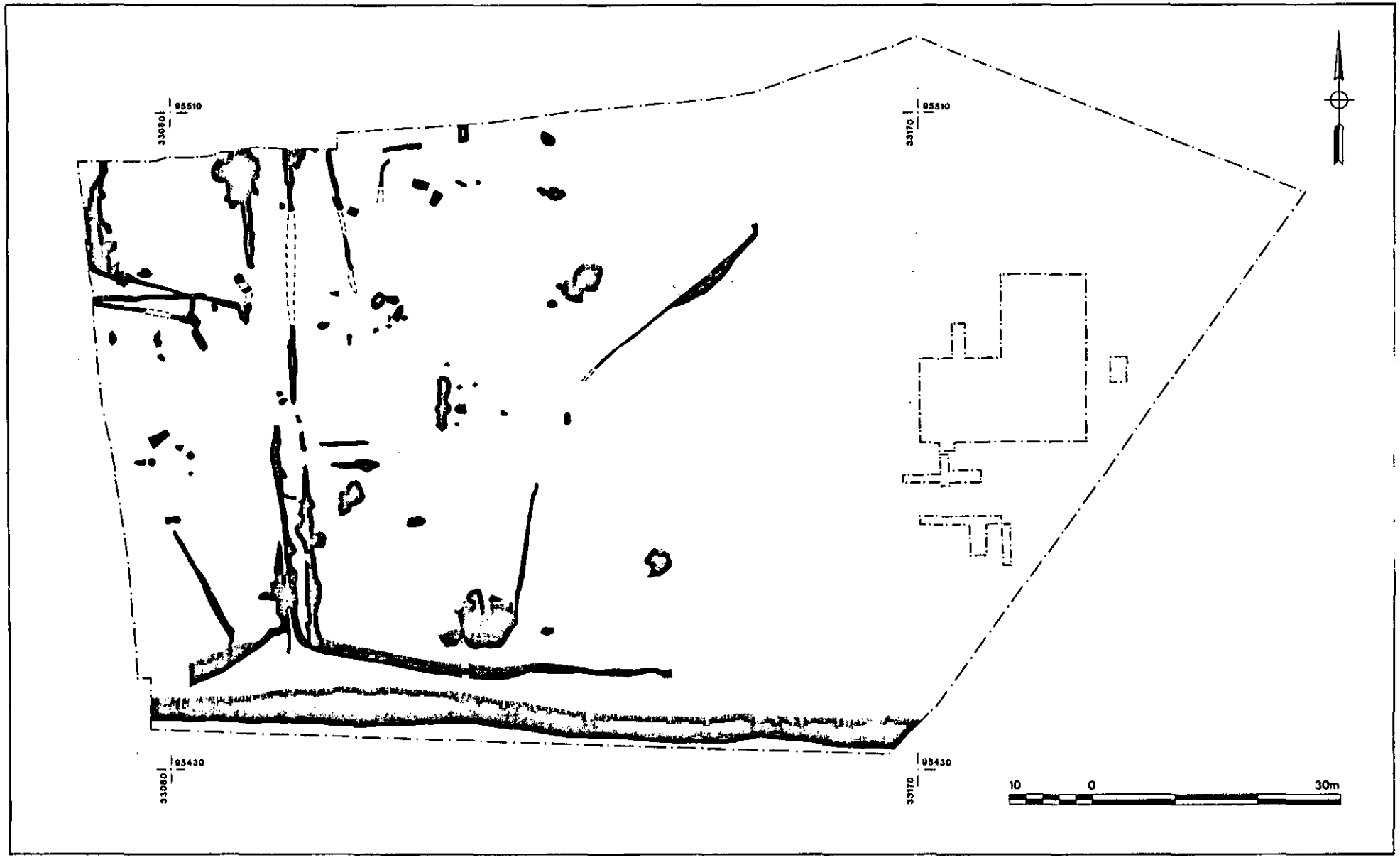


Figure 10 Late Iron Age/early Romano–British features in Area A

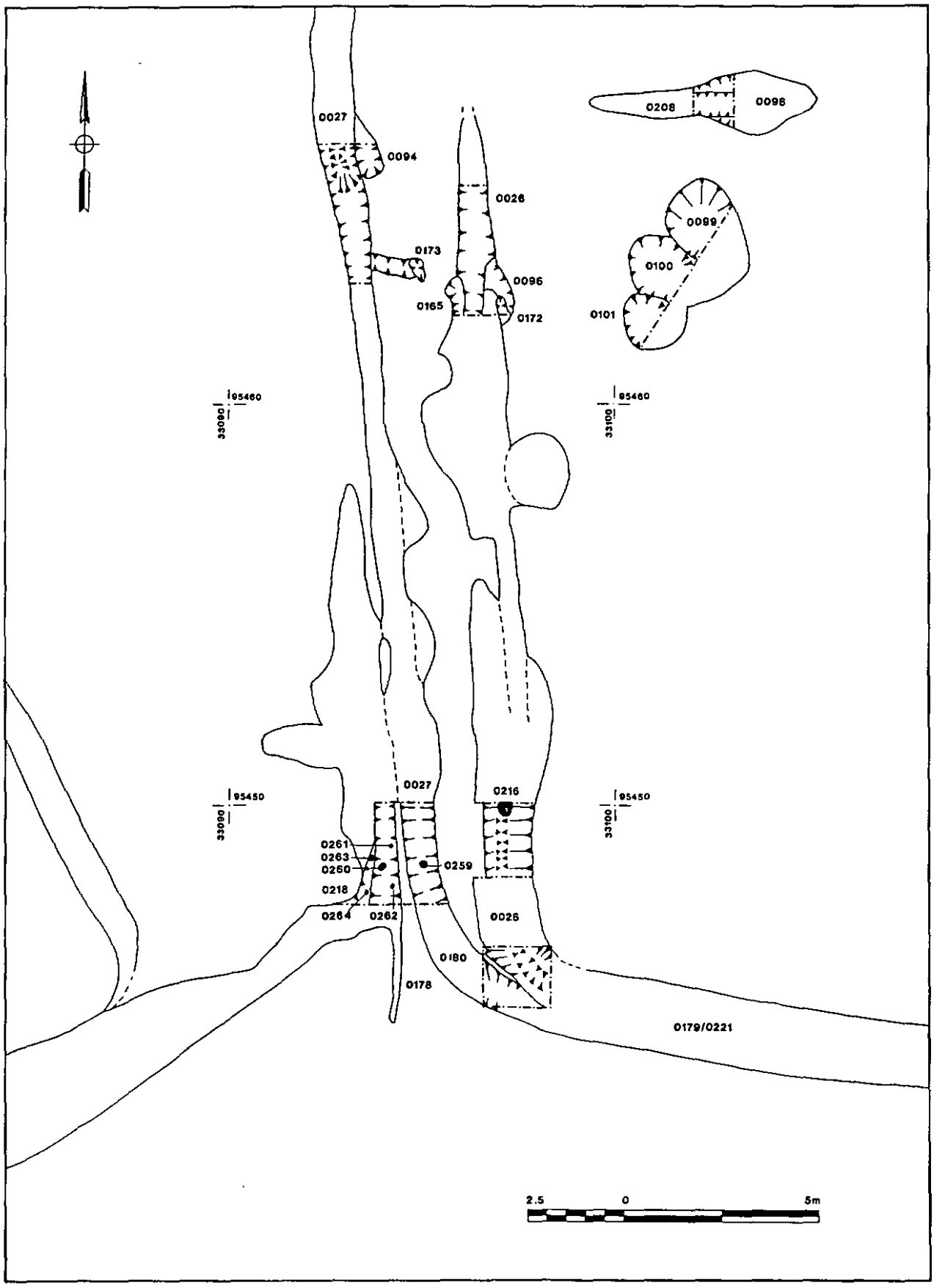


Figure 11 Plan of the south–western enclosure ditches

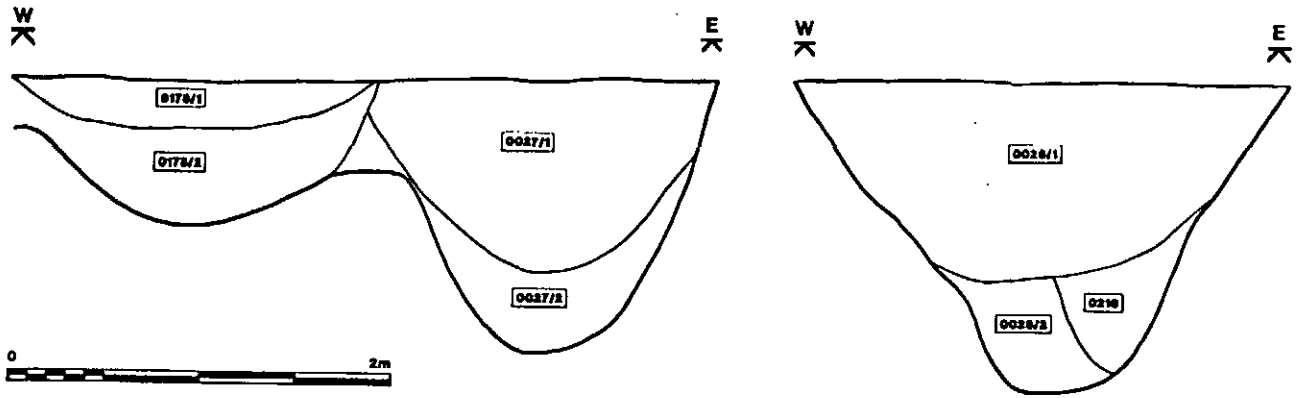


Figure 12 Sections of enclosure ditches [0026], [0027], and [0178]

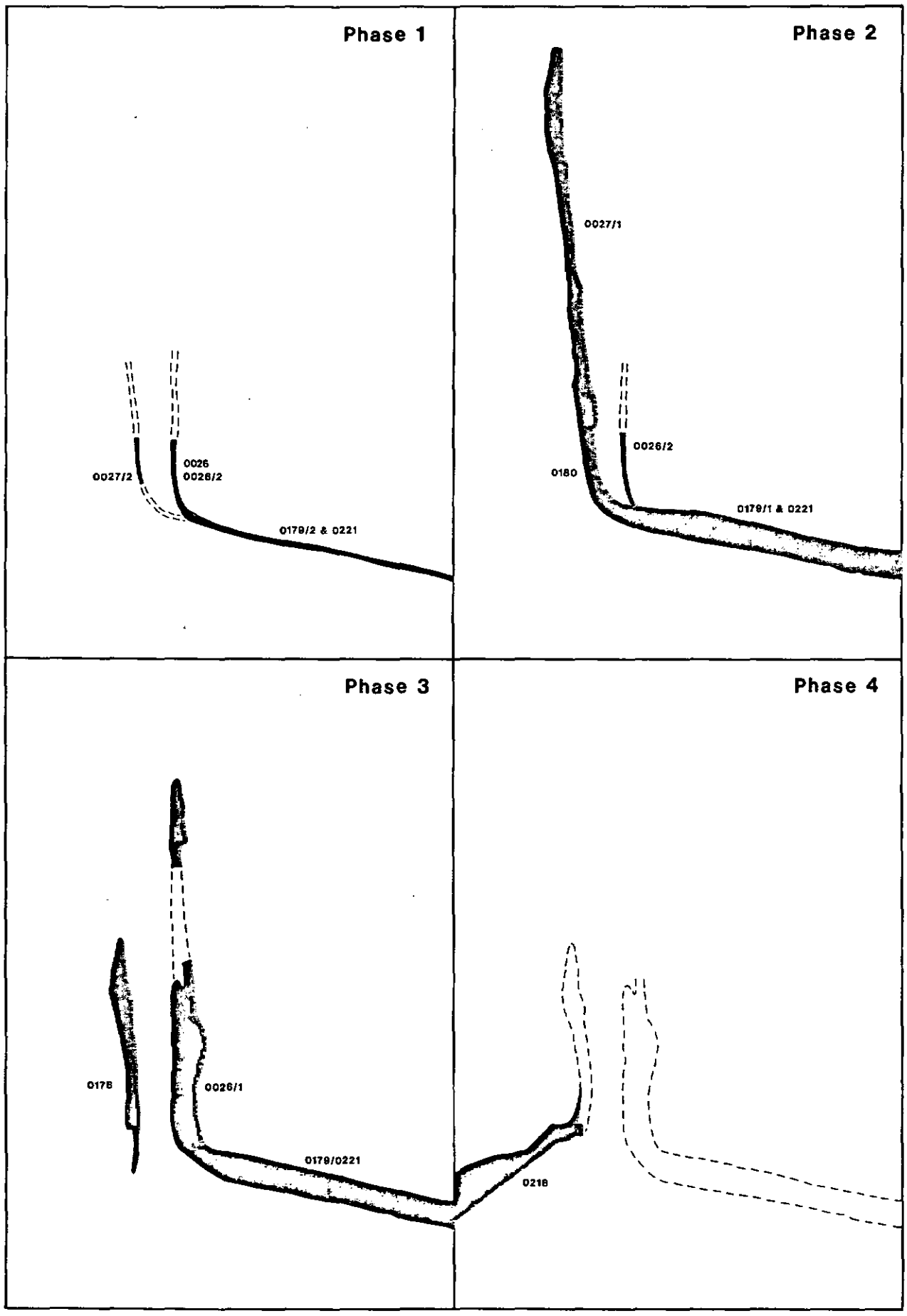


Figure 13 Schematic plan of the development of the south–western enclosure ditches

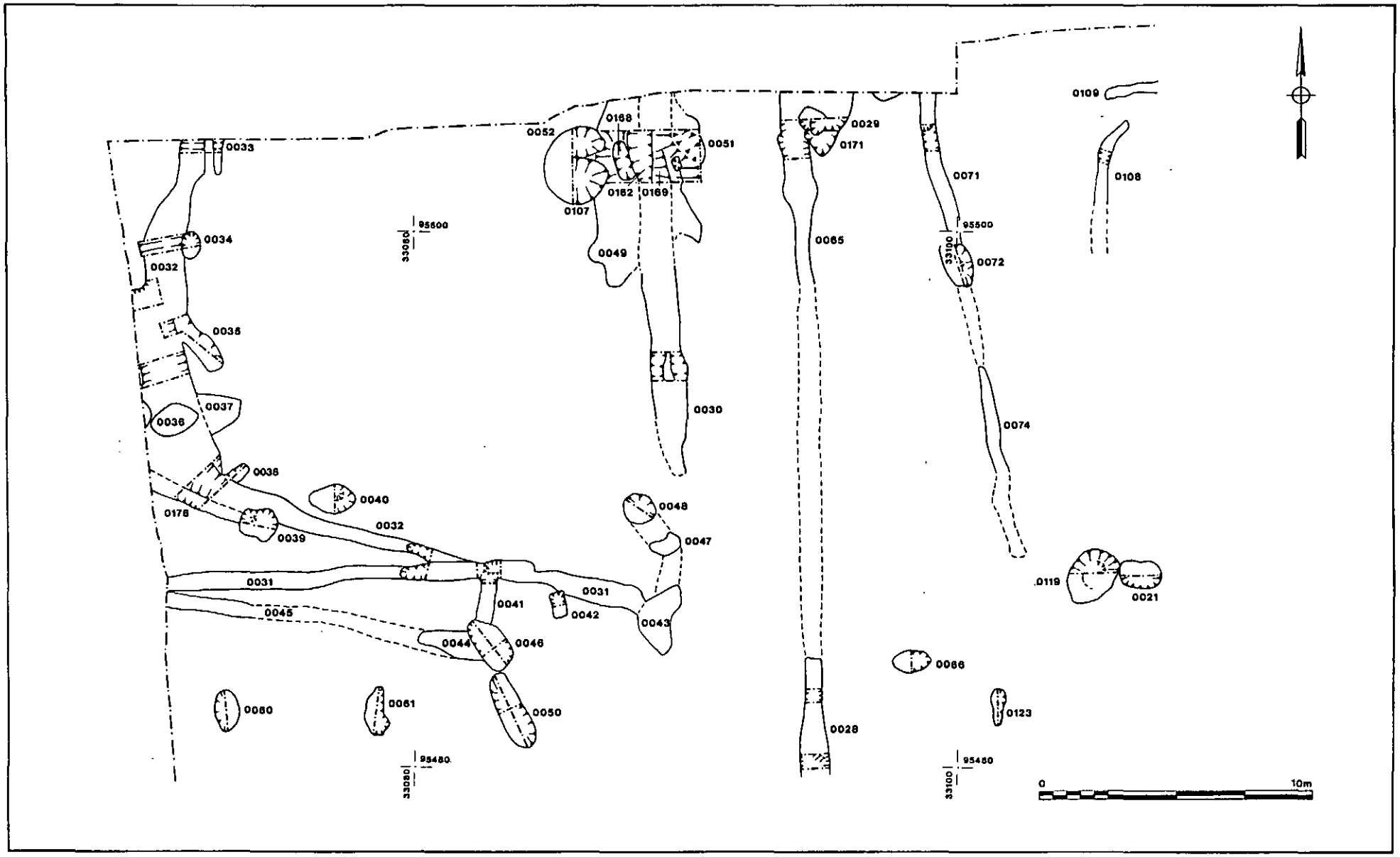


Figure 14 Plan of the north–western enclosure ditches

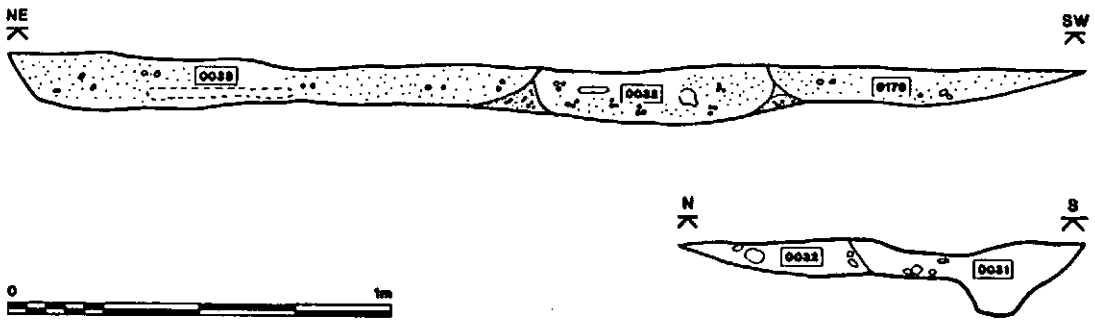


Figure 15 Sections of enclosure ditches [0031], [0032], and [0176]

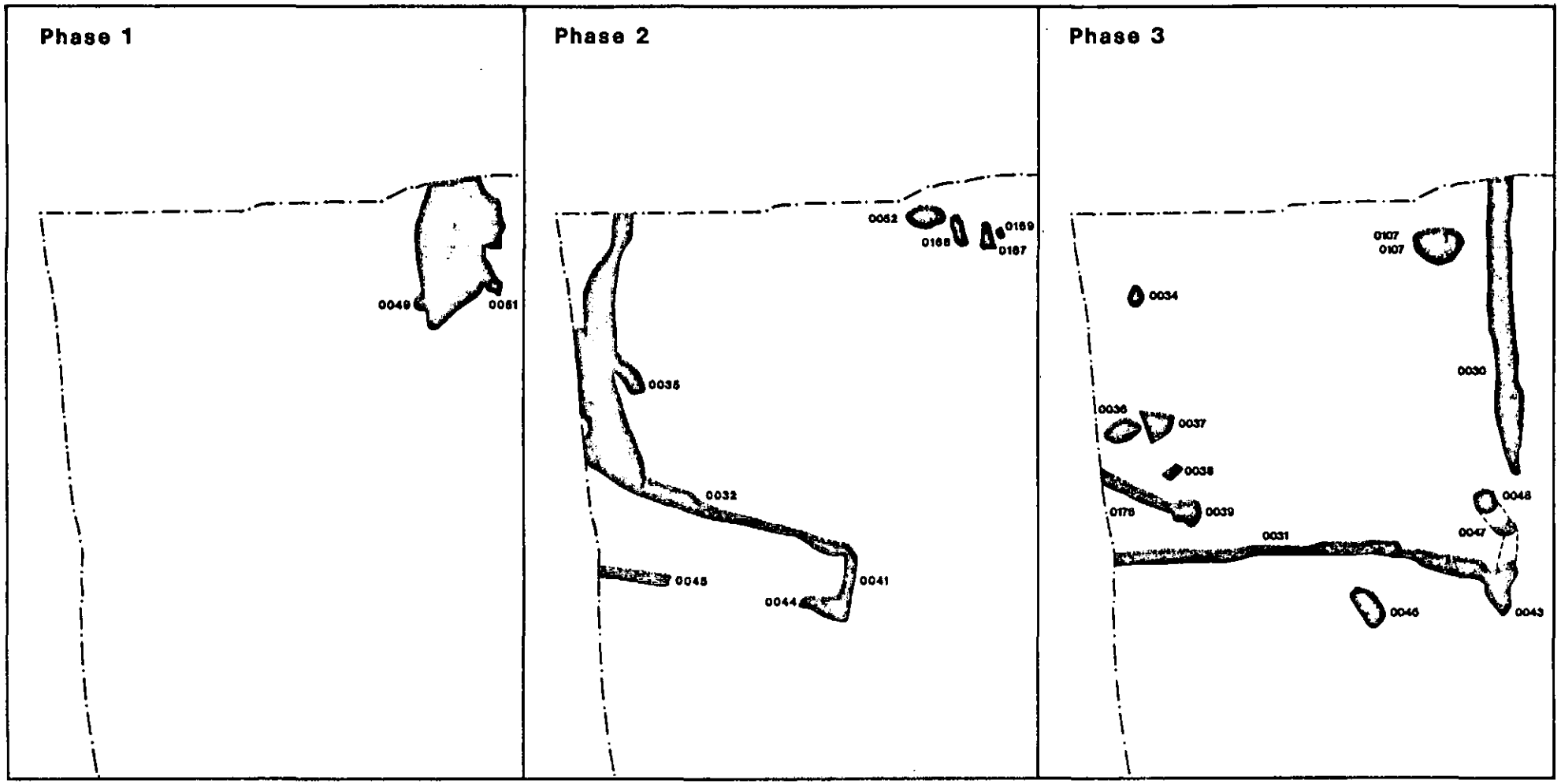


Figure 16 Schematic plan of the north–western enclosure ditches

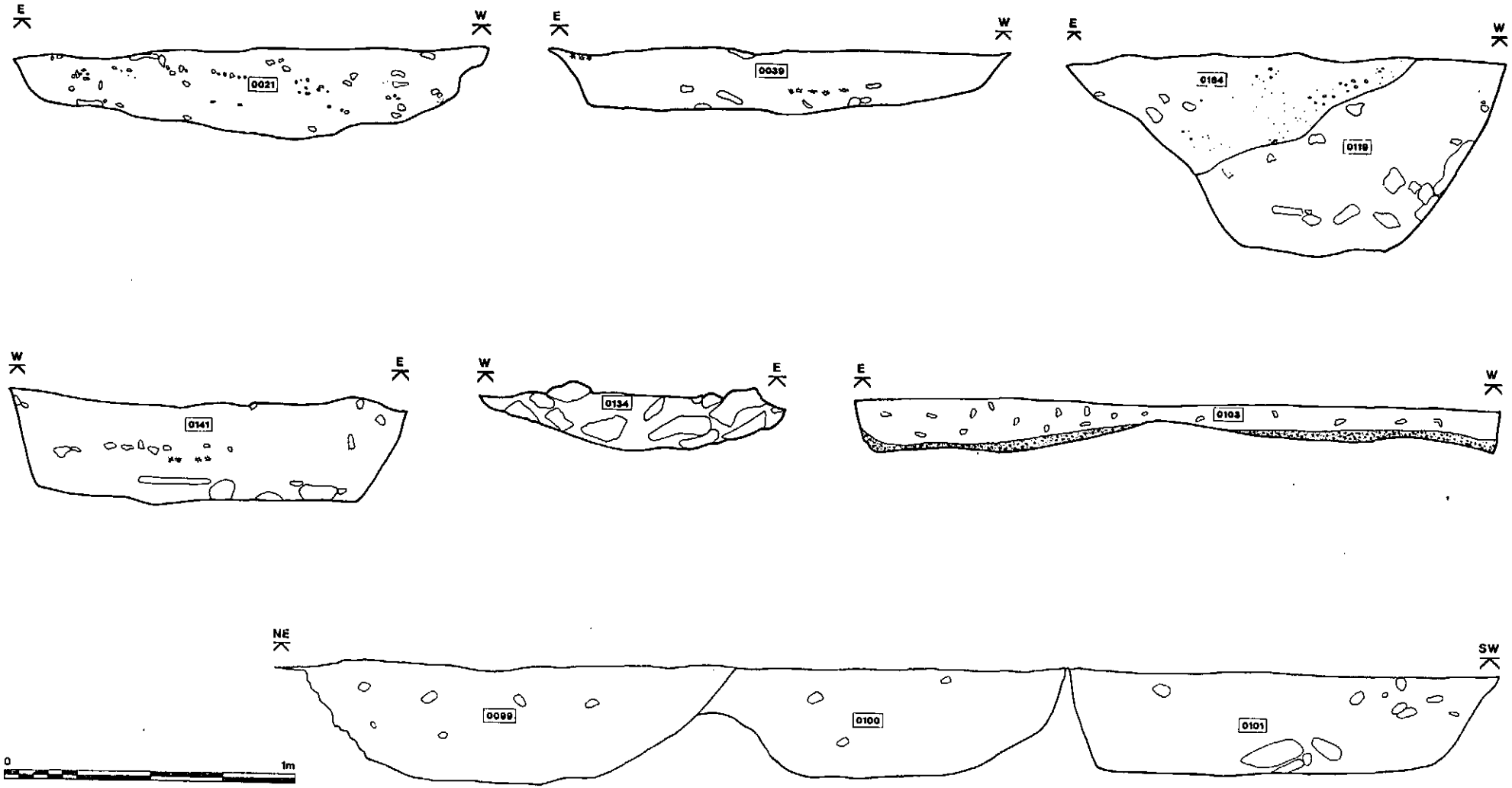


Figure 17 Examples of Romano–British pit profiles

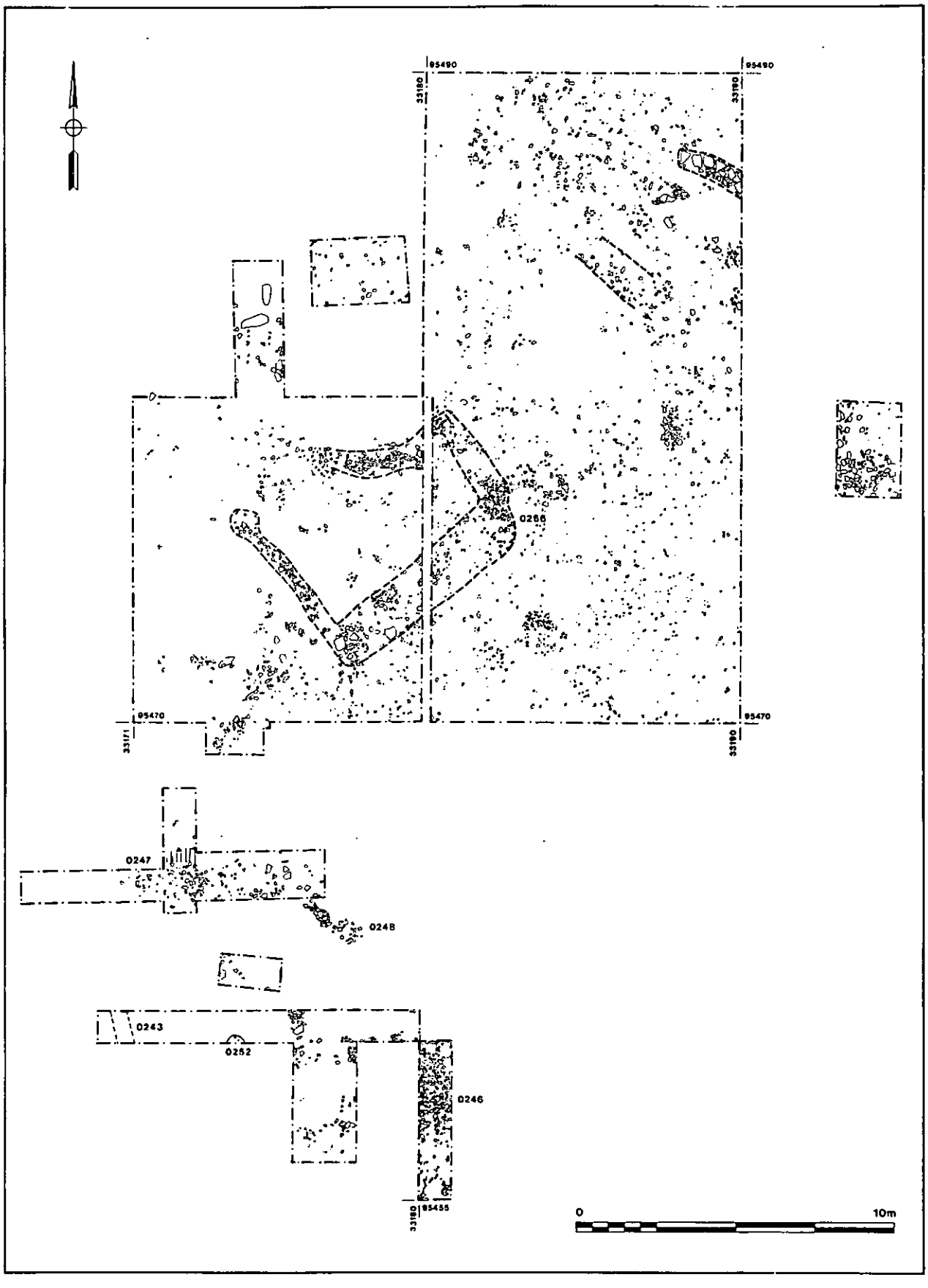


Figure 18 Plan of the unphased stone structure

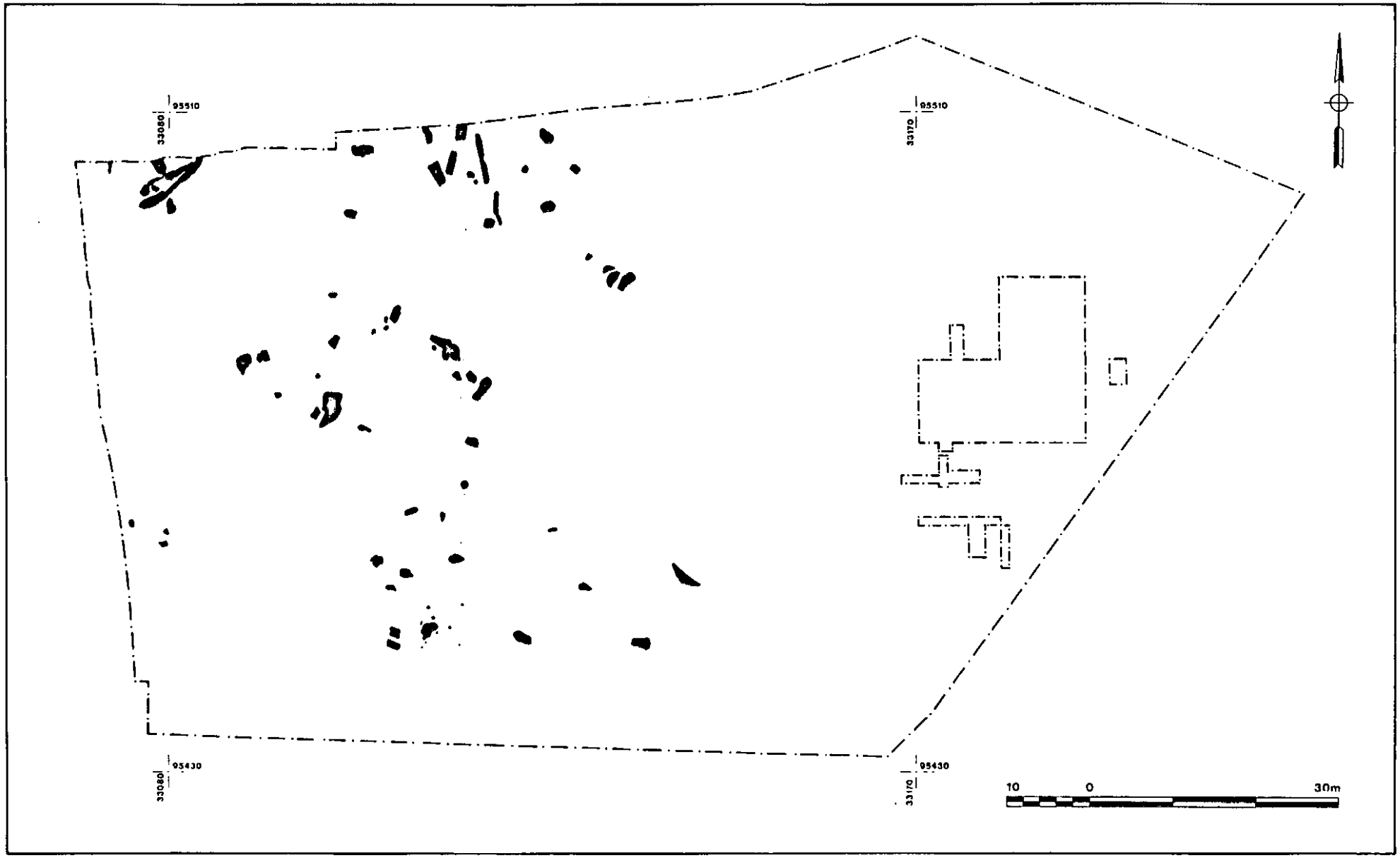


Figure 19 Plan of unphased and unexcavated features in Areas A and B

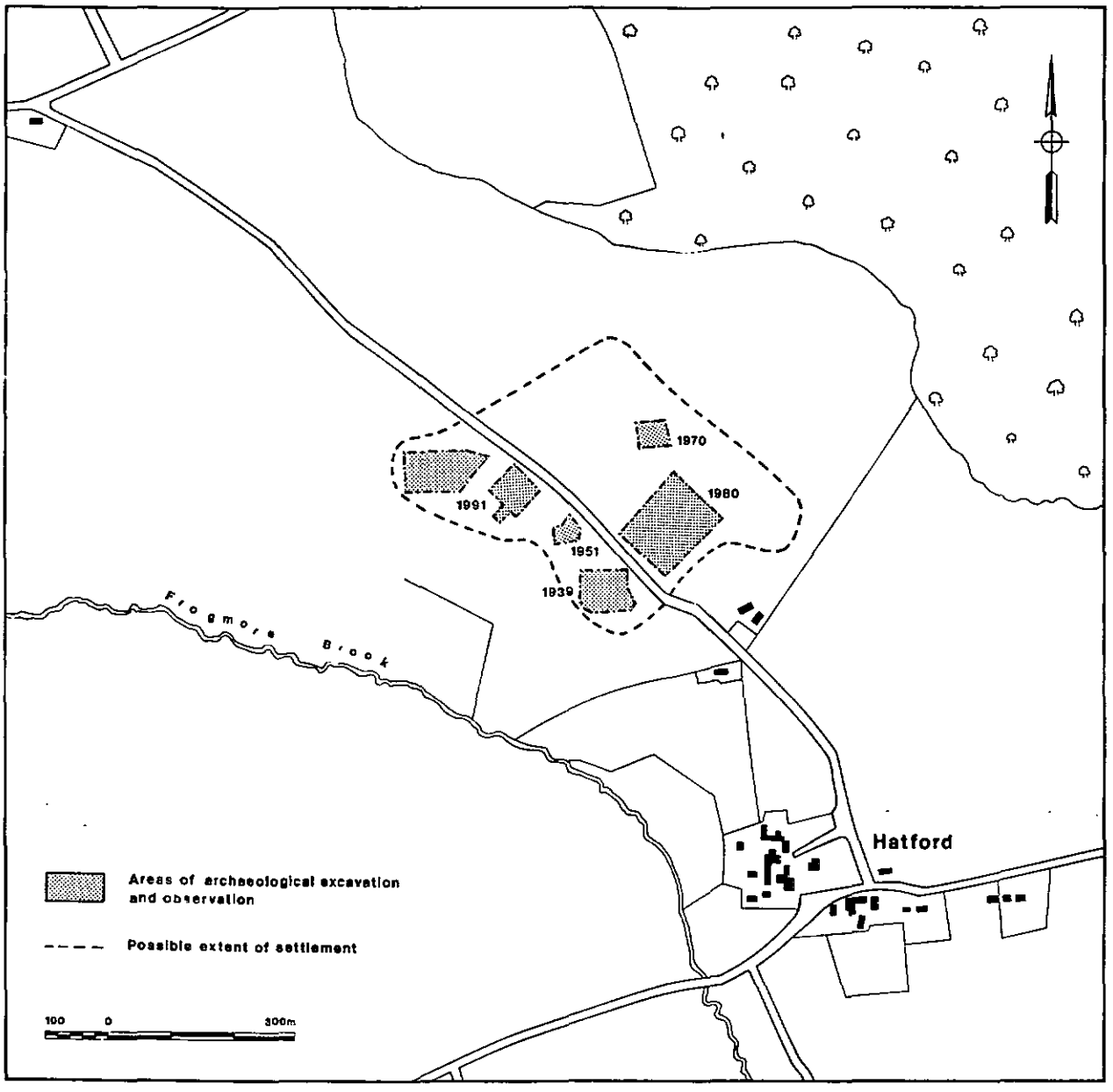


Figure 20 The possible extent of the settlement on Hatford Down

APPENDIX 1

REPORT ON GEOPHYSICAL SURVEY

Hatford, Oxfordshire

Report Number 91/66

Client : Tempus Reparatum

Work Commissioned by

TEMPVS REPARATVM

Archaeological and Historical Associates

Geophysical Surveys
of Bradford

The Old Sunday School. Kipping Lane. Thornton. Bradford BD13 3EL
Telephone (0274) 835016
Fax (0274) 830212

SITE SUMMARY SHEET

91 / 66 Hatford, Oxfordshire

NGR: SU 332 955

Location, and topography

The site lies to the north-west of the village of Hatford and the town of Stamford in the Vale, Oxfordshire. The area under threat lies west of a minor road (Sandy Lane) and just north of the B4508. One field (Area B) had recently been harvested and was under stubble, the other (Area A) was under pasture and grazed by cattle. The site overlies sand which contains bands of gravels and clays.

Archaeology

Cropmark evidence shows a complex of archaeological features in this area and past excavation work, including a recent evaluation by *Tempus Reparatum*, has confirmed this picture.

Aims of Survey

It was hoped that a geophysical survey would provide more information about the nature and extent of buried archaeological features surviving at the site. This work would assist with the planning of exacavation work by *Tempus Reparatum* in advance of proposed sand extraction.

Summary of Results *

The magnetometer survey responded extremely well and the results have revealed a complex of archaeological features. These include what appears to be a major trackway running alongside a series of ditches, which partially enclose a group of round houses and associated habitation features. Scanning with the magnetometer indicated that the archaeological remains extent well beyond the limits of the current survey, but no obvious boundary was located.

*** It is essential that this summary is read in conjunction with the detailed results of the survey.**

SURVEY RESULTS

91/66 Hatford, Oxfordshire

1. Survey Areas (Figure 1)

1.1 Two blocks (A and B) were surveyed magnetically, covering a total area of just over 1.5 hectares.

1.2 The survey grid was positioned by Geophysical Surveys of Bradford and pegs were left *in situ* to facilate accurate location of the excavation trenches.

2. Display (Figures 2 to 9)

2.1 The results are displayed in three formats :- dot density, grey-scale and X-Y trace. These display formats are discussed in the *Technical Section*, at the end of the text.

2.2 A simplified interpretation diagram is produced for both data sets (Figure 10)..

2.3 Except for Figure 8 (1:1000), all data plots are reproduced at 1:500. It should also be noted that on these plots, the north arrow shows grid north, which is aligned approximately 30 degrees east of magnetic north.

3. General Considerations - Complicating factors

3.1 Apart from the presence of a deeply rutted modern track, running along the edge of Area B, conditions at the site were ideal for survey.

3.2 Localised geological / pedological variations are thought to be responsible for the apparent truncation of some of the anomalies (see below). However, it is possible that ploughing may have damaged the archaeological features, and thus reduced the strength of the magnetic anomalies.

4. Results - Area A and B

4.1 The X-Y traces indicates that the data sets are relatively noisy. This is in part due to the concentration of archaeological features throughout both areas.

4.2 The archaeological interpretation of the results can be divided into two broad areas, those associated with a suspected trackway, and those associated with habitation features.

4.3 There is a broad band of negative magnetic anomalies flanked by two, rather ill-defined positive anomalies, running diagonally across both survey areas, east-west, (see figure 10). These seem to be associated with an old trackway, which follows a line south of the main settlement areas (see 4.4 below), on the edge of the slightly higher ground.

4.4 To the north of the postulated trackway is a complex of anomalies, in both Areas A and B, which are clearly associated with past occupation of the site. The evidence is indicative of enclosure ditches, probable round houses, rubbish pits and other midden deposits, areas of burning, and possibly small hearths, ovens or similar fired remains.

4.5 There is one area in the centre of Area A where the strength and nature of the magnetic anomalies is different from elsewhere. Anomalies to the north and south are quite strong and well defined, but they appear much weaker in the central area. There are three possible explanations for this: either the features are masked by a greater depth of topsoil, the features have been damaged by deep ploughing, or there is a localised change in the subsoils resulting in less magnetic enhancement of the features.

---

5. Conclusions

7.1 The magnetic survey work at Hatford has provide a detailed plan of the archaeological features surviving at the site. The work has helped determine the best location for excavation trenches and will assist with placing the recorded archaeological deposits in their wider context.

Project Co-ordinator: J Gater
Project Assistants: S Manifold, D Shiel and Y Minvielle-Debat
Geophysical Surveys of Bradford
5th November 1991

TECHNICAL INFORMATION

The following is a description of the equipment and display formats used in **GEOPHYSICAL SURVEYS OF BRADFORD** reports. It should be emphasised that whilst all of the display options are regularly used, the diagrams produced in the final reports are the most suitable to illustrate the data from each site. The choice of diagrams results from the experience and knowledge of the staff of **GEOPHYSICAL SURVEYS OF BRADFORD.**

All survey reports are prepared and submitted on the basis that whilst they are based on a thorough survey of the site, no responsibility is accepted for any errors or omissions

Magnetic readings are logged at 0.5m intervals along one axis in 1m traverses giving 800 readings per 20m x 20m grid, unless otherwise stated. Resistance readings are logged at one metre intervals giving 400 readings per 20m x 20m grid. The data are then transferred to a Compaq SLT/286 and stored on 3.5" floppy discs. Field plots are produced on a portable Hewlett Packard Thinkjet. Further processing is carried out back at base on a Mission or Dell 386 computer linked to appropriate printers and plotters.

Instrumentation

(a) Fluxgate Gradiometer - Geoscan FM36

This instrument comprises two fluxgates mounted vertically apart, at a distance of 500mm. The gradiometer is carried by hand, with the bottom sensor approximately 100-300mm from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is conventionally measured in nanoTesla (nT) or gamma. The fluxgate gradiometer suppresses any diurnal or regional effects. Generally features up to one metre deep may be detected by this method.

(b) Resistance Meter - Geoscan RM4 or RM15

This measures the electrical resistance of the earth, using a system of four electrodes (two current and two potential). Depending on the arrangement of these electrodes, an exact measurement of a similar volume of earth may be acquired. In such a case the amount measured may be used to calculate the earth resistivity. Using a 'Twin Probe' arrangement the terms 'resistance' and 'resistivity' may be interchanged. This arrangement involves the pairing of electrodes (one current and one potential), with one pair remaining in a fixed position whilst the other measures the resistivity variations across a fixed grid. Resistance in measured in ohms, while resistivity is measured in ohm-metres. The resistance method has a depth resolution of approximately 0.75m, although the nature of the overburden and underlying geology will cause variations in this generality.

(c) Magnetic Susceptibility

Variations in the magnetic susceptibility of subsoils and topsoils can provide valuable information about the 'level of archaeological activity' associated with a site. This phenomenon can also be used in a predictive manner to ascertain the suitability of a site for a magnetic survey. The instrument employed for measuring this culturally enhanced phenomenon is a laboratory based susceptibility bridge. Standard 50g soil samples are collected in the field.

Display Options

The following is a description of the display options used. Unless specifically mentioned in the text, it may be assumed that no filtering or smoothing has been used to enhance the data. For any particular report a limited number of display modes may be used.

(a) X-Y Plot

This involves a line representation of the data. Each successive row of data is equally incremented in the Y axis, to produce a 'stacked' profile effect. This display may incorporate a 'hidden-line' removal algorithm, which blocks out lines behind the major peaks and can aid interpretation. Advantages of this type of display are that it allows the full range of the data to be viewed and shows the shape of the individual anomalies. Results are normally produced on a flatbed plotter.

(b) Dot-Density

In this display, minimum and maximum cut-off levels are chosen. Any value that is below the minimum cut-off value will appear 'white', whilst any value above the maximum cut-off value will appear 'black'. Any value that lies between these two cut-off levels will have a specified number of dots depending on the relative position between the two levels. The focus of the display may be changed using different levels and a contrast factor (C.F.). When the contrast is equal to 1, then the scale between the two cut-off levels is linear. A C.F.>1 helps to enhance the higher readings, although a C.F. greater than 2 is rarely required. To assess lower than normal readings involves the use of an inverse plot. This plot simply reverses the minimum and maximum values, resulting in the lower values being represented by more dots. In either representation, each reading is allocated a unique area dependant on its position on the survey grid, within which numbers of dots are randomly placed. The main limitation of this display method is that multiple plots have to be produced in order to view the whole range of the data. It is also difficult to gauge the true strength of any anomaly without looking at the raw data values. This display is much favoured for producing plans of sites, where positioning of the anomalies and features is important.

(c) Contour

This display joins data points of an equal value by a contour line. Displays are generated on the computer screen or plotted directly on a flat bed plotter / inkjet printer. The former will generate either colour or black and white copies depending on the printer used.

(d) 3-D Mesh

This display joins the data values in both the X and Y axis. The display may be changed by altering the horizontal viewing angle and the angle above the plane. Again, the output may be either colour or black and white. A hidden line option is occasionally used (see (a) above).

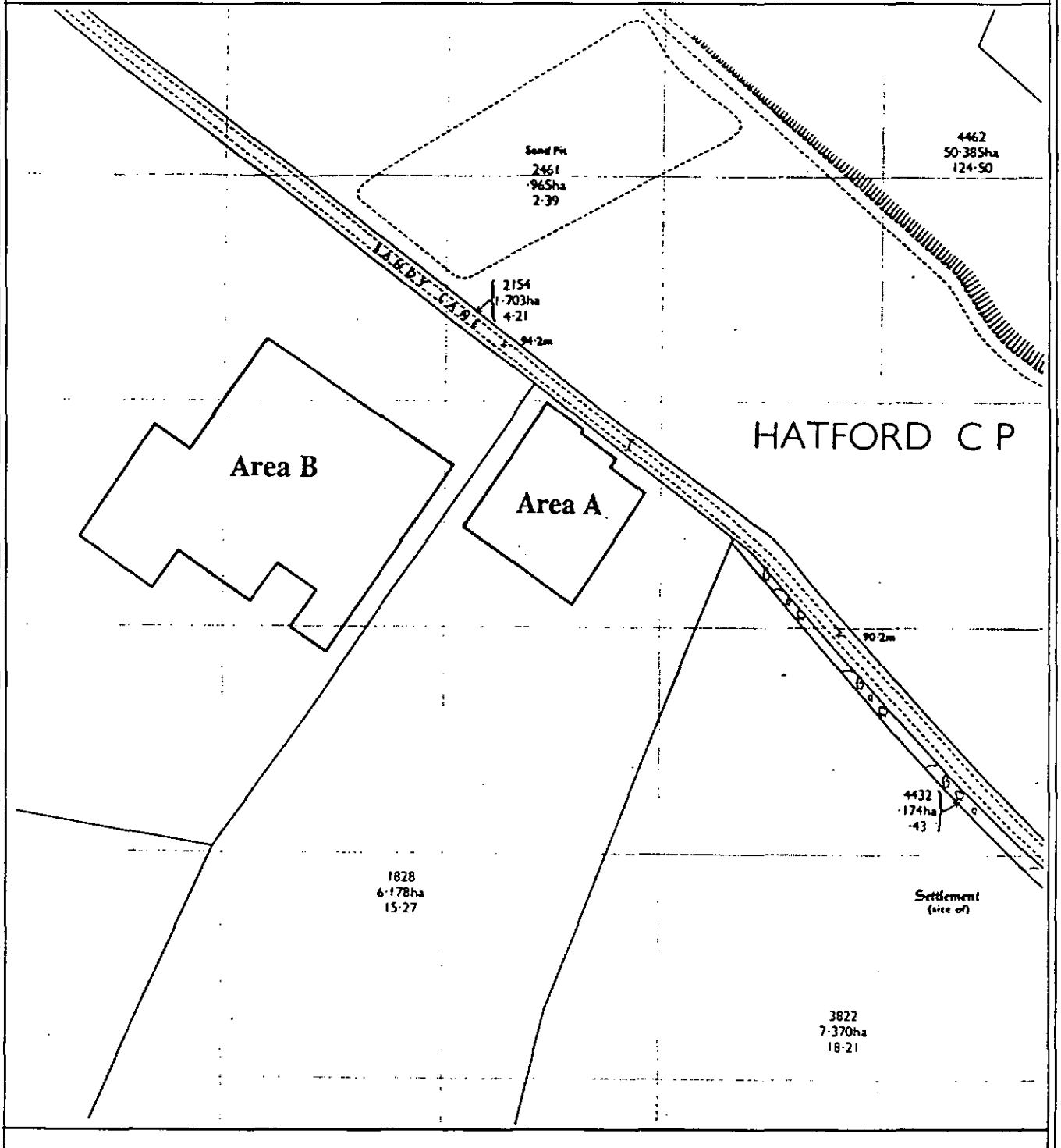
(e) Grey-Scale

This format divides a given range of readings into a set number of classes. These classes have a predefined arrangement of dots, the intensity increasing with value. This gives an appearance of a toned or grey scale.

Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. While colour plots can look impressive and can be used to highlight certain anomalies, grey-scales tend to be more informative.

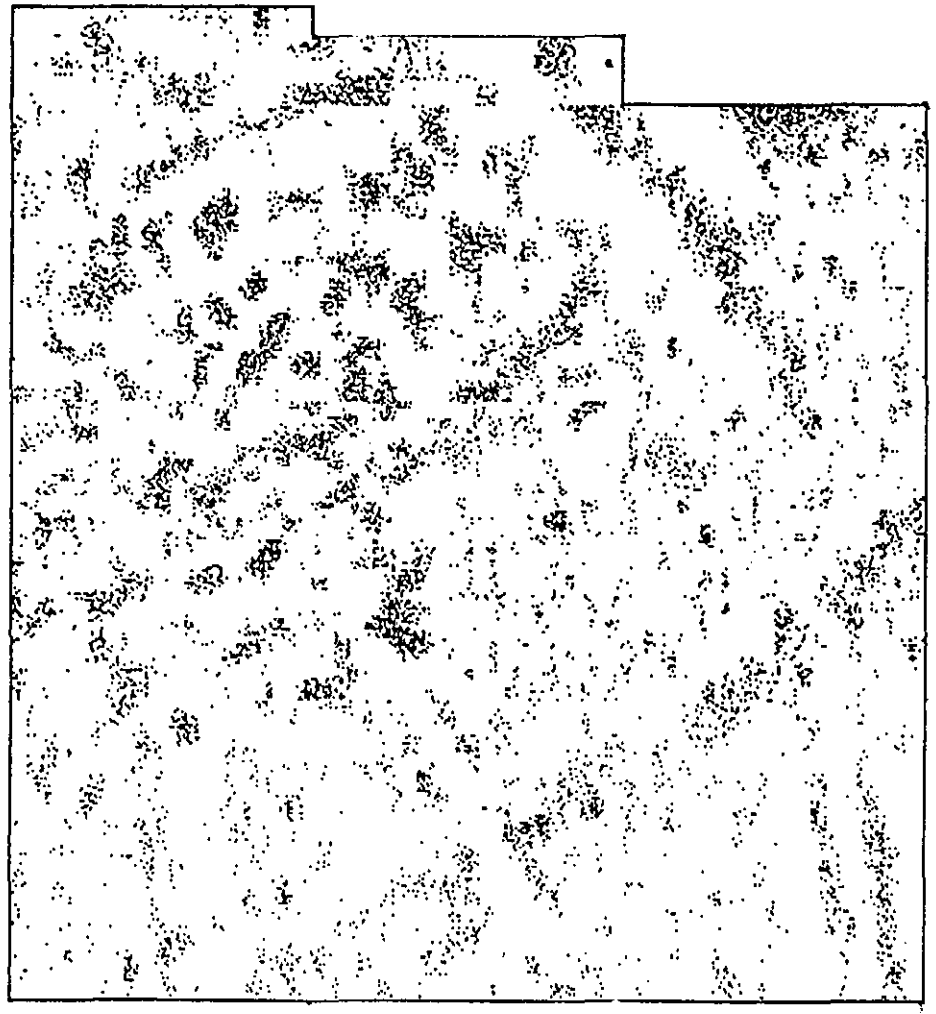
HATFORD, Oxfordshire

Grid Location Diagram



1:2500

Figure 1



HATFORD

Area A

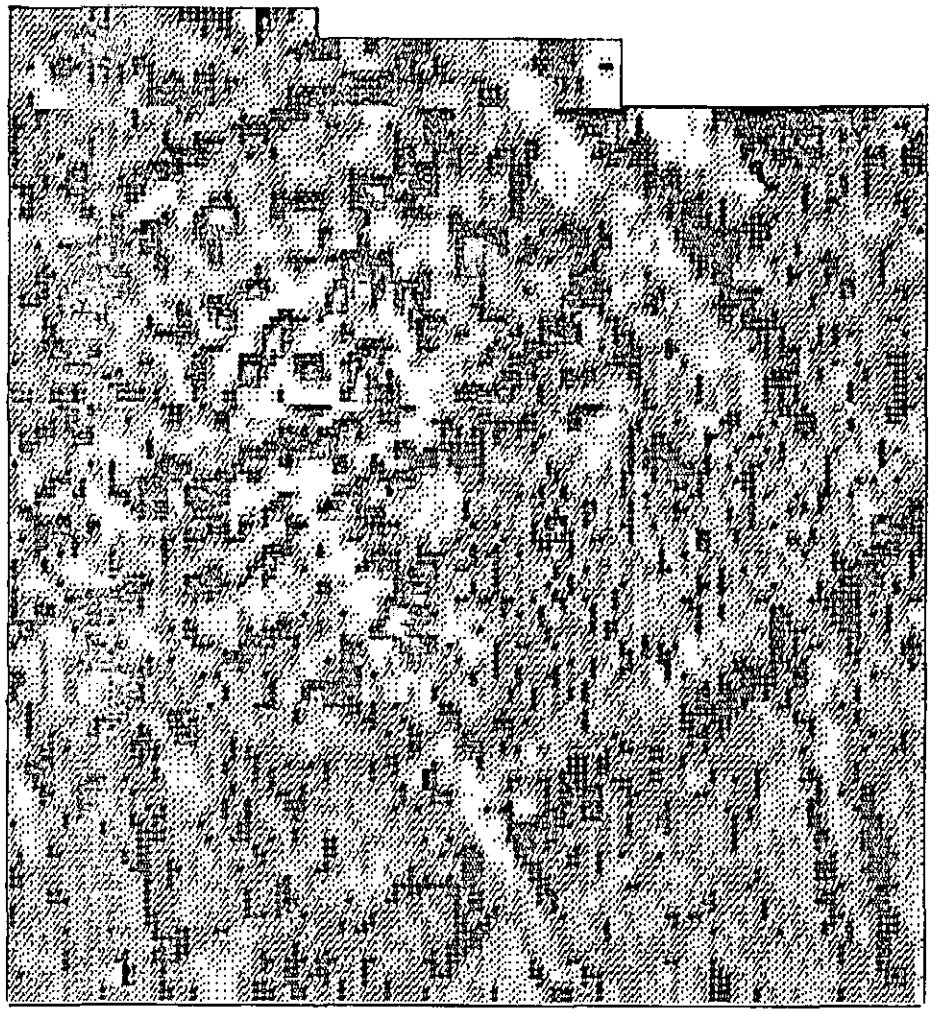
3.0

nT

0.2

0 m 20

Figure 2



HATFORD

Area A

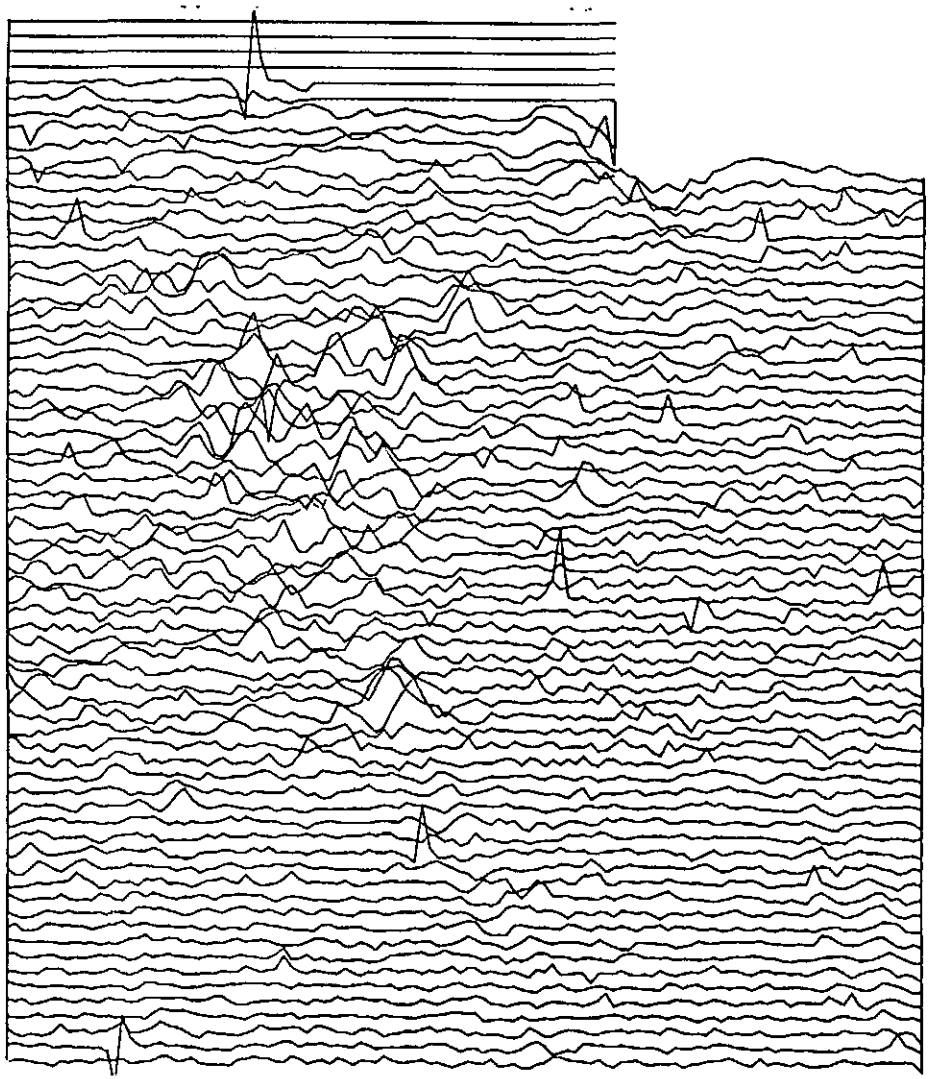
+3.5

nT

-1.5

0 m 20

Figure 3



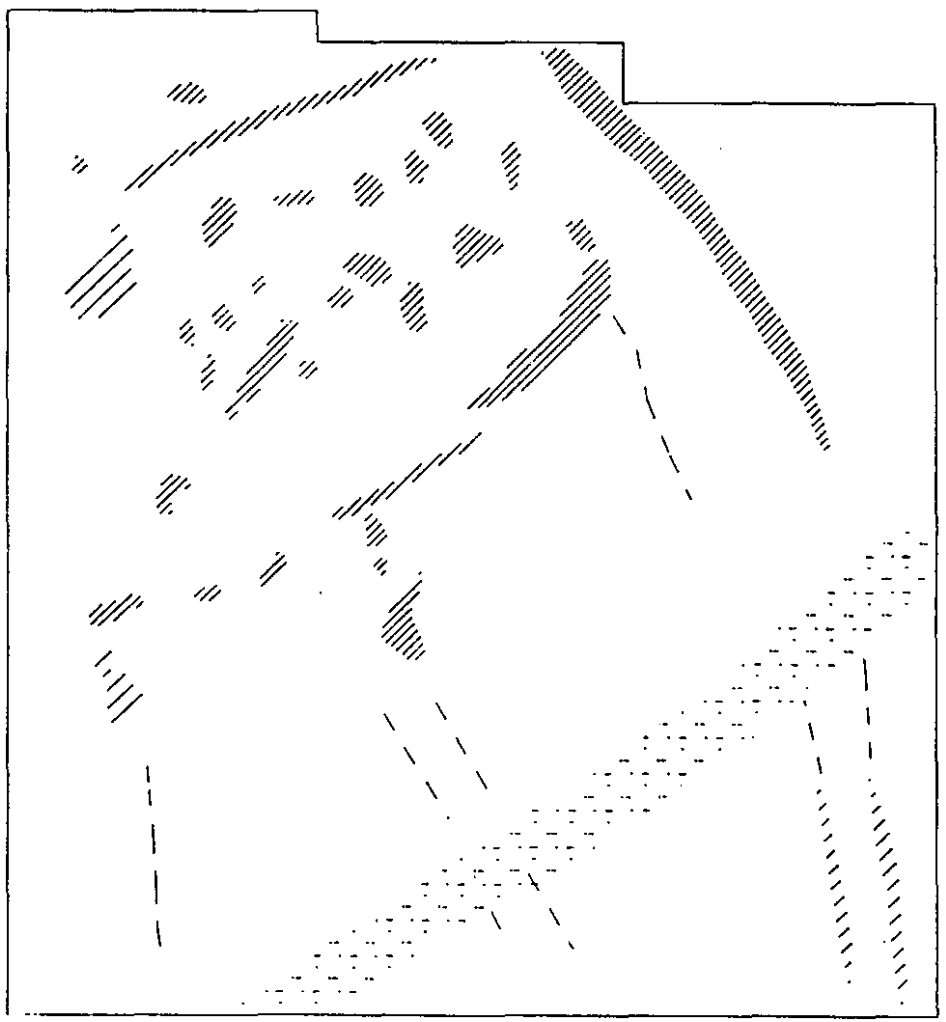
HATFORD

Area A

16 nT

0 m 20

Figure 4



HATFORD

Area A

Simplified Interpretation

Strong Magnetic Anomalies

Weak Magnetic Anomalies

Conjectural

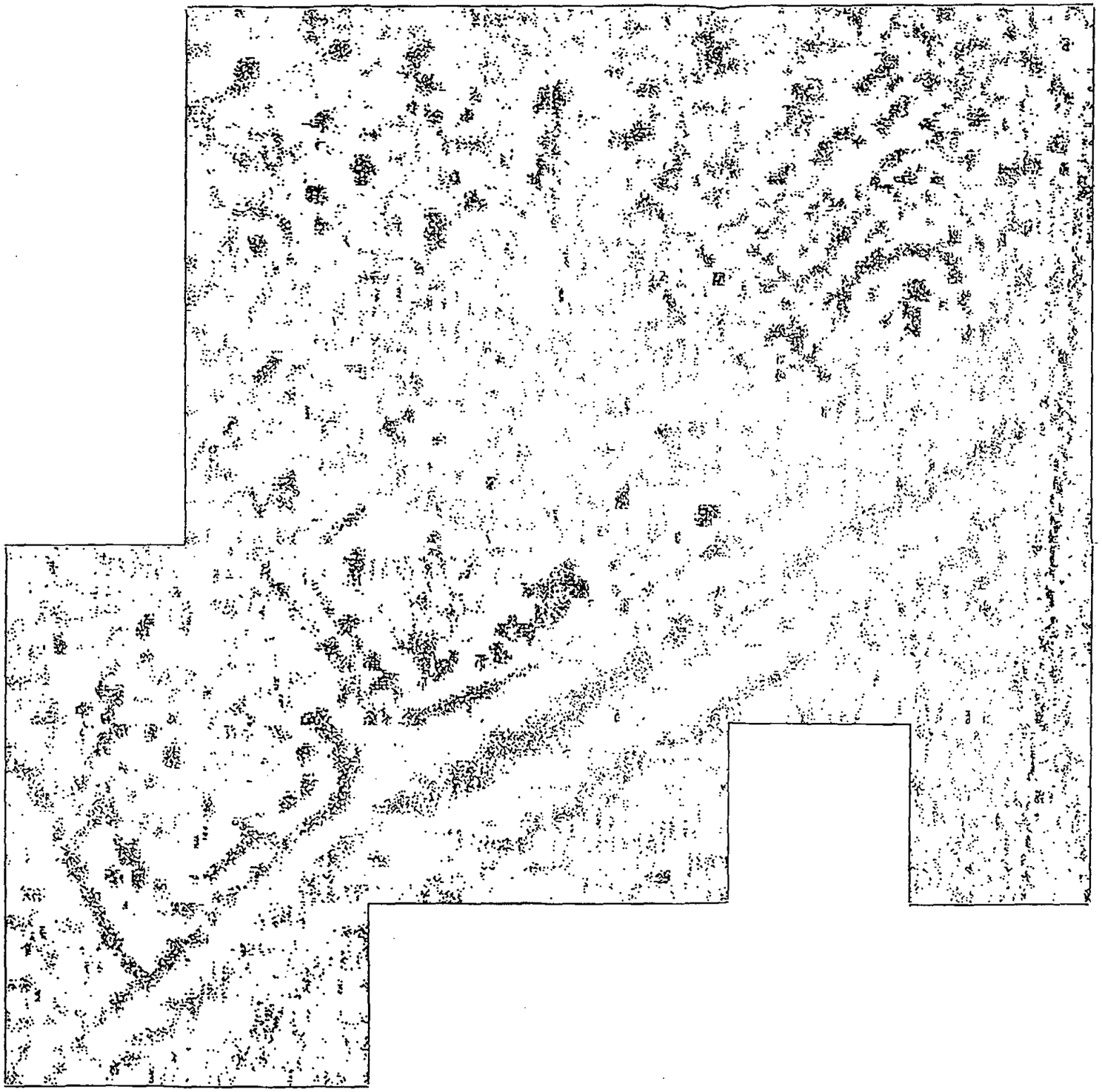
Former Track

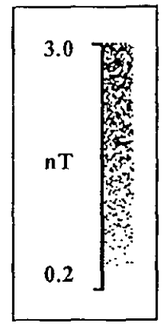
0 m 20

Figure 5

HATFORD

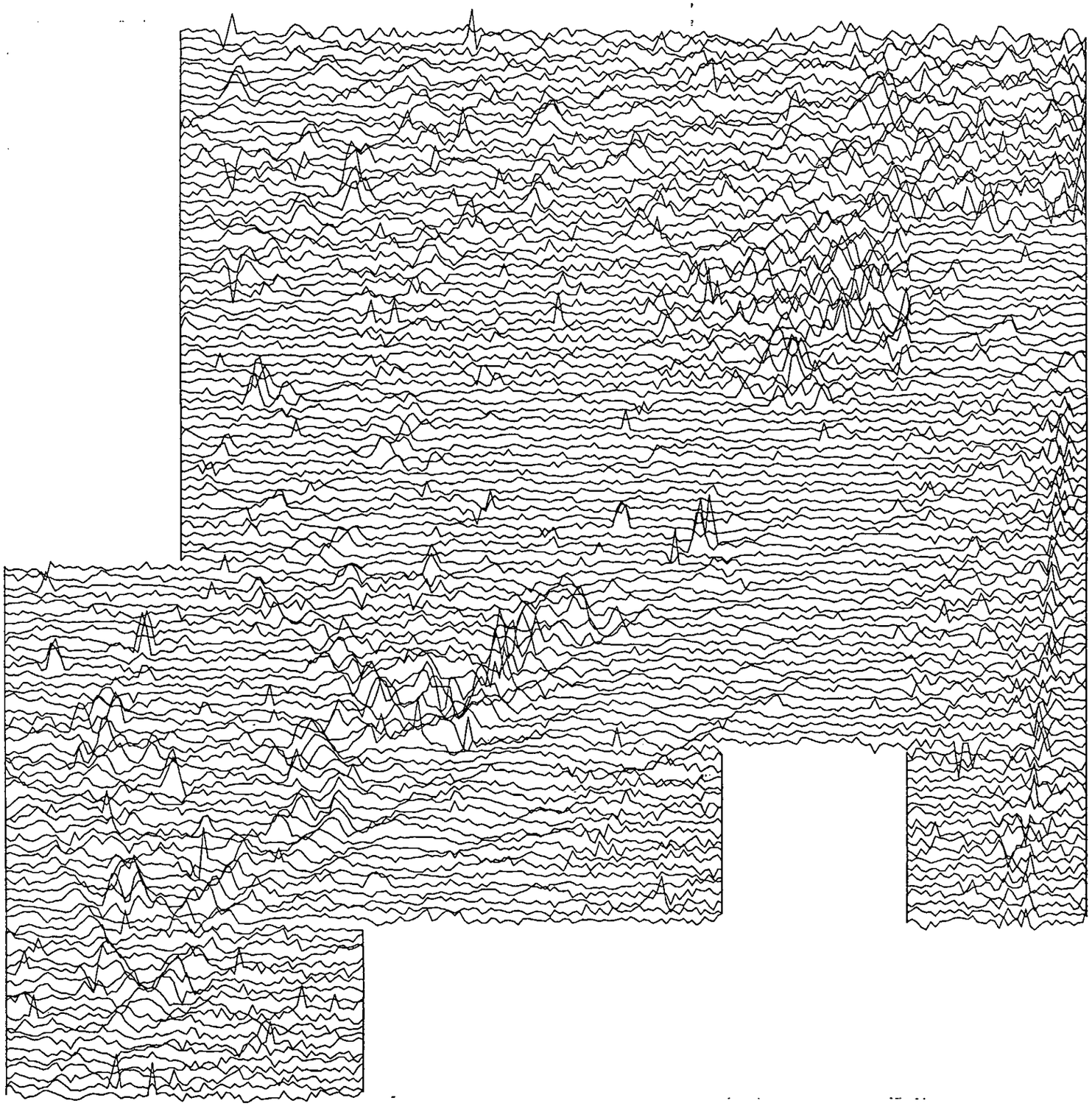
AREA B





0 m 20

Figure 6



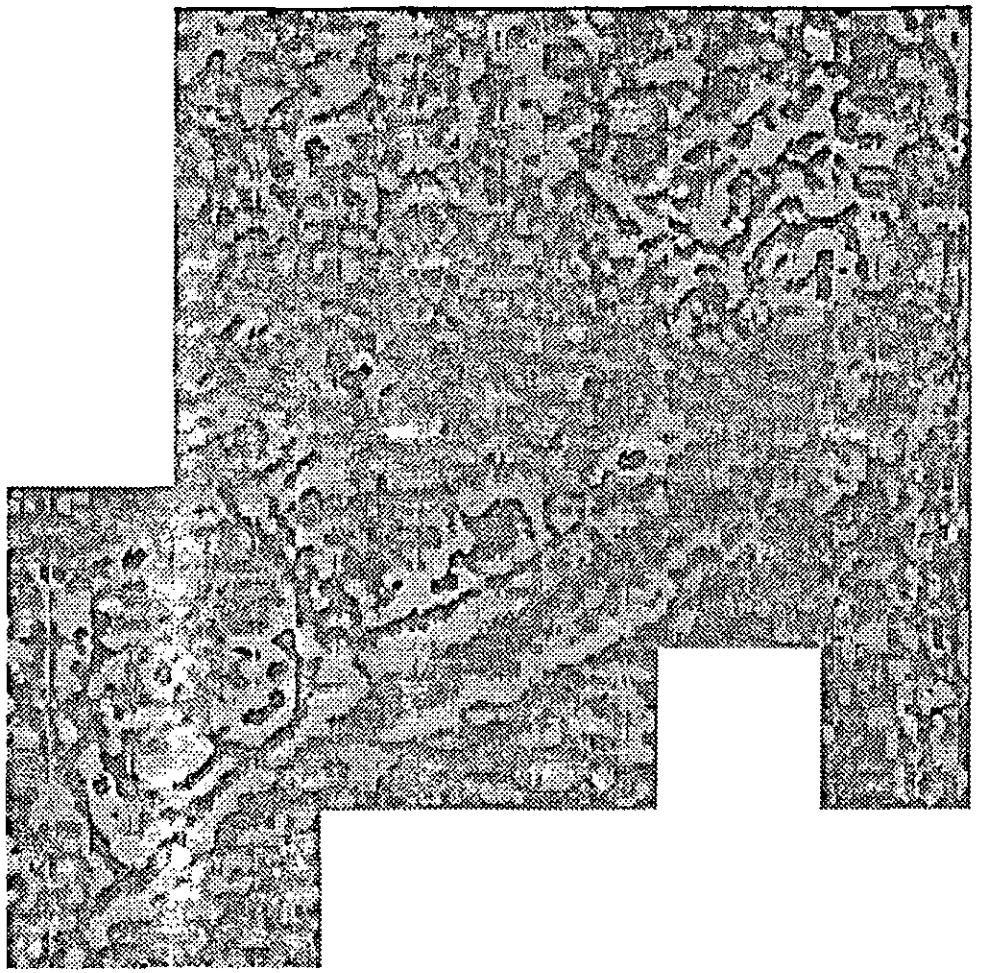
HATFORD

AREA B

16 nT

0 m 20

Figure 7



HATFORD

Area B

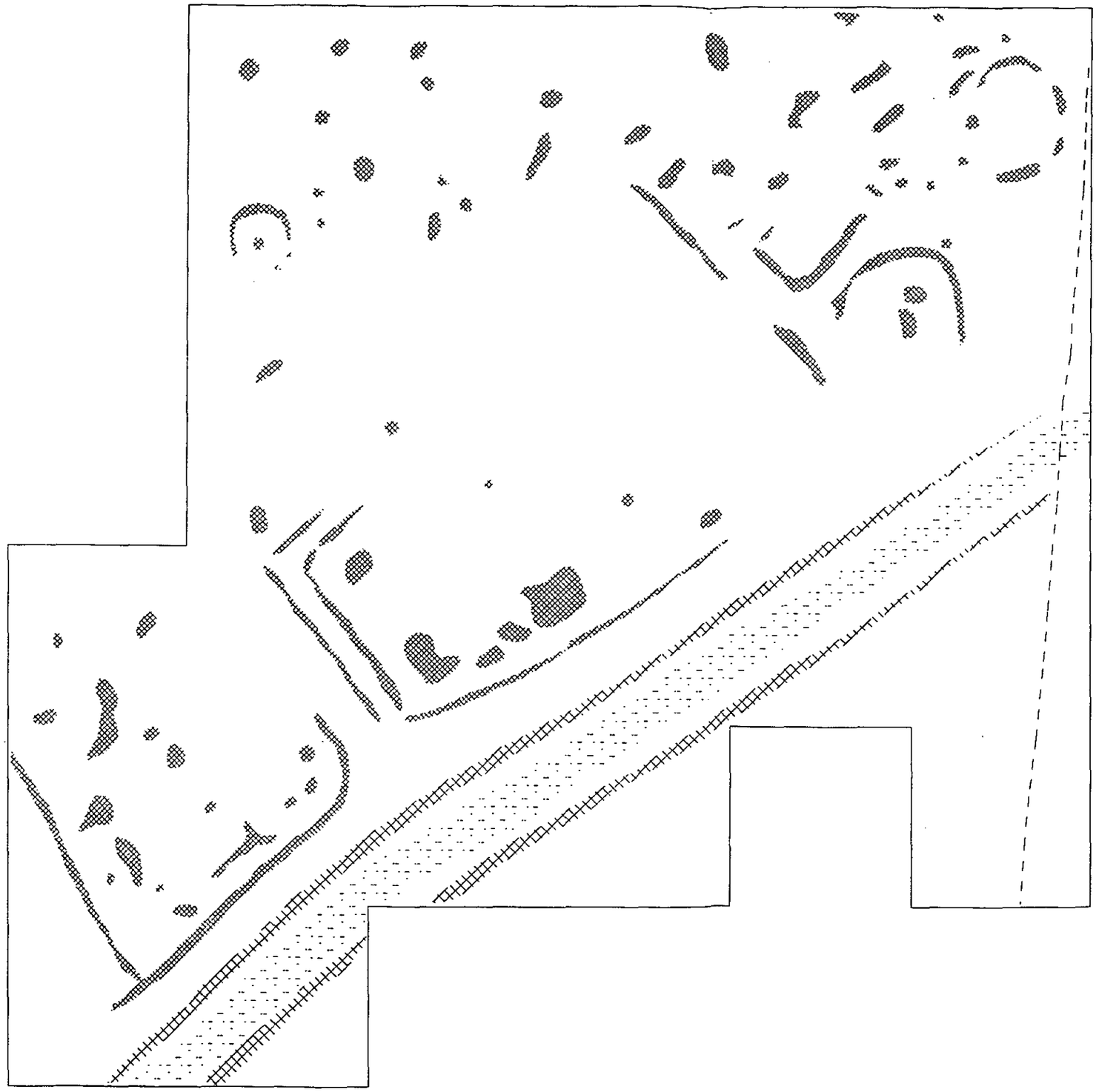
+3.5

nT

-1.5

0 m 40

Figure 8



HATFORD

Area B

Simplified Interpretation

Strong Anomalies

Weak Anomalies

Former Track

Modern Track

0 m 20

Figure 9

APPENDIX 2

HATFORD OXHAMF91: THE IRON AGE AND ROMAN POTTERY by P M Booth

INTRODUCTION

The excavations produced some 3263 sherds of Iron Age and Roman pottery, weighing 43.710 kg. (This figure excludes 378 sherds (2.557 kg) from the evaluation of the site, which were reported on separately by D Knight. His report is in the project archive). With the exception of a very few medieval and post-medieval sherds, all unstratified, which were noted but not recorded in detail, all the pottery, including unstratified sherds, was examined. The great bulk of the material ranges in date from the middle Iron Age to the late 1st-early 2nd century AD, with only a few sherds which need have been later and none which were certainly earlier (though earlier sherds were noted amongst the evaluation finds, see discussion below). The late Iron Age to early Roman transition period was particularly well-represented in this assemblage in Area A (which produced c 85% of all the sherds from the site). The much smaller group from Area B (c 15% of the pottery) consisted almost entirely of middle Iron Age material.

The pottery was recorded using the system now employed by the Oxford Archaeological Unit for Iron Age and Roman pottery from the region. This system uses standardised codes for inclusion types, fabrics/wares and vessel types and other characteristics, allowing easy comparison of data between sites. Classification of fabrics/wares and vessel types operates hierarchically so that groups recorded at different levels of precision, whether for reasons connected with the material or determined by levels of resourcing, can still be compared. Such an approach has been sadly lacking in the region over the last few decades, with the result that comparison of different assemblages has been extremely difficult until recently.

Quantification of the Hatford material was by sherd count, weight, rim count and vessel equivalents (based on rim percentages). This last measure, while undoubtedly the best way of quantifying Romanised vessel types, is of less value for handmade material in which an accurate assessment of rim diameter can be very difficult to achieve, particularly with small sherds. For this reason the more subjective vessel count based on rim sherds has been retained. Details of rim, base and decorative types were also recorded.

The material was generally in good condition; surfaces were well-preserved, with soot deposits surviving on some sherds. The average sherd weight for the assemblage as a whole was 13.4 gm; that for Area A was 13.6 gm and for Area B 12.4 gm. The average weight of the middle Iron Age sherds was consistently very slightly lower than that of the later material. Since middle Iron Age sherds are on average rather thicker walled than later fabrics, this suggests that the middle Iron Age material was in fact rather more fragmented than the later pottery. This suggestion is borne out by a consideration of the size of rim sherds. Allowing for the difficulty of assessing the diameter of

hand made vessels (see above) the 146 late Iron Age and Roman rim sherds each represented on average c 11% of the rim circumference of the vessels from which they derived. For the middle Iron Age material (63 rims) the corresponding figure was only c 5%, which seems to imply a greater degree of fragmentation. Despite the fact that the middle Iron Age assemblage had a higher proportion of relatively open mouthed vessels, which tend to produce smaller individual rim sherds than more closed forms, this contrast may still be significant.

THE FABRICS

Two contrasting methods of fabric recording were employed, reflecting in part the differences between the earlier and later components of the assemblage. For the handmade middle Iron Age material the fabric classification is based entirely on the principal inclusion types found in each sherd. The two main inclusion types are recorded using letter codes, together with a numeric assessment of the coarseness of the fabric on a simple scale of 1 (fine) to 5 (very coarse). This system is very similar to that used by Lambrick at Farmoor (Lambrick 1979, 35), though not directly modelled on it. The inclusion identification letters employed at Hatford are A (quartz sand), C (calcareous gravel), F (flint), G (grog), I (iron oxides), L (limestone), M (mica), N (none), Q (large quartzite), S (shell) and V (vegetable/organic). These inclusions can occur in any combination, and there were a few examples of each of a considerable number of uncommon combinations, with a smaller number of much more common combinations. In practise, although many sherds contain more than two inclusion types it is very unusual for more than two to be significant in terms of characterising the fabric. An advantage of the present system is that it allows fabrics to be characterised and similar products identified at a number of sites without the use of an identifying code which tends to suggest that the fabrics in question are necessarily identical. Such correlations are very difficult to make in pre-Roman ceramics except on geographically closely related sites or with very distinctive products. Similarities of potting tradition and access to common sources of materials can thus be pointed up without it being necessary to assume exactly common sources for fabrics with similar combinations of inclusions.

For the later material a system of fabric/ware codes is used. These codes can be used at one of a number of different levels, the simplest being that of the major ware group, defined on the basis of a single principal common characteristic and identified by an appropriate letter. Such codes used at Hatford were F (fine wares, usually colour-coated etc), W (white wares), O (oxidised 'coarse' wares), R (reduced 'coarse' wares) and E (late Iron Age/early Roman 'Belgic type' wares). Other major ware groups, such as A (amphorae), M (mortaria) and B (black-burnished ware) were absent from the site.

The major ware classes are subdivided into groups, usually with

a common characteristic such as a principal inclusion type, and can additionally be defined at the level of a specific fabric. Thus fabric R10 is a generalised code for fine sandy reduced wares, and fabric R11 is the specific code for the fine, early Roman Oxfordshire product (Young 1977, 203, fabric 4). For the bulk of the late Iron Age and early Roman pottery from Hatford definition was at the intermediate level of precision, since more detailed examination would have been very time-consuming. Nevertheless the level of recording adopted permits a reasonable understanding of the development of ceramic trends on the site. Where definition at the level of individual fabric was possible this was carried out.

It is of course possible to combine elements of both recording techniques. Arbitrary 'fabric codes' could be assigned to the Iron Age material if necessary, though this approach has been eschewed here. More useful, particularly with the late Iron Age/early Roman material, is the use of detailed fabric definitions alongside ware codes, so that the precise composition of particular pieces can be ascertained. This can shed valuable light on processes of technological change at a time of rapid evolution of ceramic traditions. This approach was employed with the present assemblage when it seemed likely to provide useful information, and some of the results of this will be discussed below.

Middle Iron Age fabrics

A wide variety of these fabrics was present at Hatford, particularly in Area A. They were separated out from the rest of the pottery on the basis of technology - ie all the sherds were hand made (though some later sherds were also probably hand made), their occurrence usually in simple forms, and characteristic features of surface treatment. There were inevitably some sherds (particularly of small size) which could not be attributed to one period or the other with complete confidence, but the number of such pieces was insufficiently large to present problems of interpretation.

Quantities of the various Iron Age fabrics are given below for Areas A and B separately. The fabrics are grouped according to their principal inclusion type, and then within each main grouping by secondary inclusion type and by fineness. Inclusion type letters are those given in the text above.

	AREA A				AREA B				TOTAL			
FABRIC	no.sh.	%	weight	%	no.sh.	%	weight	%	no.sh.	%	weight	%
AN1	1		4		1		3		2	0.1	7	-
AN2	660		8465		211		2524		871	57.8	10989	55.9
AN3	22		320		8		184		30	2.0	504	2.6
AN4	1		8						1	0.1	8	-
AA3	1		54		4		185		5	0.3	239	1.2

AA4	1		5		1		57		2	0.1	62	0.3
AM1	1		4						1	0.1	4	-
AM2	12		58		54		549		66	4.4	607	3.1
AM3	1		5						1	0.1	5	-
AI2	5		40						5	0.3	40	0.2
AI3	10		76						10	0.7	76	0.4
AC2	5		23		17		158		22	1.5	181	0.9
AC3	3		14		13		129		16	1.1	143	0.7
AC4	1		3						1	0.1	3	-
AL2	9		62		1		11		10	0.7	73	0.4
AL3	10		55		12		122		22	1.5	177	0.9
AS2	6		25		1		11		7	0.5	36	0.2
AS3	4		45		7		70		11	0.7	115	0.6
AS4	2		9		1		8		3	0.2	17	0.1
AQ3	6		189						6	0.4	189	1.0
AV1	1		16						1	0.1	16	0.1
AV2	7		113		9		195		16	1.1	308	1.6
AV3	14		115		1		40		15	1.0	155	0.8
AG2	44		652						44	2.9	652	3.3
AG3					1		4		1	0.1	4	-
A subtotal	827	80.4	10360	75.6	342	71.4	4250	71.1	1169	77.6	14610	74.3
CN3	1		39						1	0.1	39	0.2
CN4	37		471						37	2.5	471	2.4
CN5	1		2						1	0.1	2	-
CA3	4		89						4	0.3	89	0.5
CA4	8		71		1		13		9	0.6	84	0.5
CA5	1		10						1	0.1	10	0.1
CL3	1		6						1	0.1	6	-
CL4	5		93						5	0.3	93	0.5
CS3	1		3						1	0.1	3	-
CS4	13		226		2		6		15	1.0	232	1.2
CG3	1		12						1	0.1	12	0.1
CG4	2		7						2	0.1	7	-
CV3	1		2						1	0.1	2	-
C subtotal	76	7.4	1031	7.5	3	0.6	19	0.3	79	5.2	1050	5.3
LN3	2		3						2	0.1	3	-
LN4	5		40						5	0.3	40	0.2
LA3	2		8						2	0.1	8	-
LA4	6		115		1		10		7	0.5	125	0.6

LC4	6		262						6	0.4	262	1.3
LC5	1		8						1	0.1	8	-
LV4	1		211						1	0.1	211	1.1
L subtotal	23	2.2	647	4.7	1	0.2	10	0.2	24	1.6	657	3.3
SN4	4		111		2		18		6	0.4	129	0.6
SN5	32		551		102		1314		134	8.9	1865	9.5
SA3	3		24						3	0.2	24	0.1
SA4	13		108		5		84		18	1.2	192	1.0
SA5	18		106		8		62		26	1.7	168	0.9
SC3	1		3						1	0.1	3	-
SC4	5		28		6		27		11	0.7	55	0.3
SC5	4		74		1		6		5	0.3	80	0.4
SL3	1		7						1	0.1	7	-
SL4	1		7						1	0.1	7	-
SL5	5		340						5	0.3	340	1.7
SV4	1		15						1	0.1	15	0.1
SV5	1		38						1	0.1	38	0.2
SG3					1		14		1	0.1	14	0.1
SG4					1		7		1	0.1	7	-
S subtotal	89	8.7	1412	10.3	126	26.3	1654	27.7	215	14.3	3066	15.6
QN3	1		9						1	0.1	9	-
QN4	2		39						2	0.1	39	0.2
QA3	1		3						1	0.1	3	-
QA5	1		8						1	0.1	8	-
QL4	1		6						1	0.1	6	-
QF4	1		2						1	0.1	2	-
QV5	2		111						2	0.1	111	0.6
Q subtotal	9	0.9	178	1.3					9	0.6	178	0.9
FN4					2		11		2	0.1	11	0.1
FA4					1		9		1	0.1	9	-
FS3	1		3						1	0.1	3	-
FQ5	1		12						1	0.1	12	0.1
F subtotal	2	0.2	15	0.1	3	0.6	20	0.3	5	0.3	35	0.2
VA5					4		23		4	0.2	23	0.1
GN4	1		12						1	0.1	12	0.1
GV4	1		40						1	0.1	40	0.2
G subtotal	2	0.2	52	0.4					2	0.1	52	0.3
TOTAL	1028	68.2	13695	69.6	479	31.8	5976	30.4	1507	100	19671	100

Table 1: Middle Iron Age fabrics. Number of sherds and weight with percentages.

Many of the individual fabrics are of minor importance, but at the level of groupings by principal inclusion type (the subtotals in Table 1) patterns can be seen in the data. The dominant fabric groups are those which were tempered principally with quartz sand. In Area B only two groups were of any significance. These were the principally sand tempered fabrics and the principally shell tempered fabrics. In Area A a wider range of fabrics occurred, and while shell tempered fabrics were again second in importance to sand tempered ones they were a lower proportion of the Iron Age pottery than in Area B and were supplemented by calcareous gravel and limestone fabrics. These variations between the two areas may indicate slight differences of chronological emphasis between them. This is discussed in more detail below.

Quartz sand was used as the principal tempering agent in combination with a great range of other inclusion types, though it was most common when apparently unaccompanied. In sherds assigned to fabrics AN1, AN2 and AN3 the occasional occurrence of mica, iron ores or shell has been disregarded since these were clearly materials occurring commonly in the basic clay source. Mica was only noted when it seemed to be particularly prominent. Sherds assigned to fabric AM2 are very closely related to those of AN2, and the distinction is probably not significant. Similarly those sherds in which the occurrence of iron oxides was specifically noted (fabrics AI2 and AI3) were also not significantly different from those of AN2 and AN3 except in terms of the relative frequency of the iron inclusions. Of other principally sand tempered fabrics perhaps the most noteworthy and certainly the most numerous was AG2. The sherds in this fabric are, however, all from a single vessel (No. 8 x50), probably a transitional middle to late Iron Age piece, hence the occurrence of grog which becomes so characteristic of late Iron Age pottery in the region.

Fabrics in which quartz sand was combined with calcareous gravel, limestone and shell are fairly frequent, but never formed a really substantial part of the assemblage. All these materials could be found together, and in some cases the distinction between them was not always clear cut, particularly since most of the shell was probably fossil material which could have derived from either of the other two. When calcareous gravel, limestone and shell are the dominant inclusion types they are almost always combined with quartz sand or with each other in various ways - there were only nine sherds in the 318 sherds of the C, L and S groups from both areas in which other inclusion types formed the secondary element.

The significance of the minor fabric groups is unclear. They may represent technological aberrations, or they may belong to periods which are otherwise not well-represented in the assemblage. Both large angular quartzite and flint can be considered characteristic of the later Bronze Age in the Upper Thames, particularly in the region to the SE of Hatford, but

flint is also found in some of the late Iron Age fabrics in the area, both at Hatford and eg at Abingdon Vineyard (unpublished). The fabrics with flint as the principal tempering agent may perhaps be seen alongside the organic and grog tempered fabrics as products of the period of transition from middle to late Iron Age styles. The place of the quartzite tempered fabrics is less clear, but at best they form only a very minor component of the assemblage, possibly earlier in date than most of the rest of the pottery. There is at present insufficient evidence to show that these fabrics are exclusively of early date.

Surface treatment and decoration

One hundred and seventy seven middle Iron Age sherds (11.7% of all the sherds of this date) were recorded as having decoration of some kind. In the great majority of cases this consisted of burnishing of the surface. This can be considered a form of surface finish rather than a strictly decorative technique, but is included here for completeness. The size of the middle Iron Age sherds did not permit an accurate assessment of the extent of finishing techniques such as wiping, smoothing (as opposed to burnishing) and knife trimming, so no attempt was made to record these systematically. The incidence of decorative types by fabric is shown in Table 2.

Some form of burnished zone finish/decoration was found on all but four of the decorated sherds (ie on 11.5% of all the middle Iron Age sherds), and on all but eight it was the only form of decoration. In the great majority of these instances the burnish was overall. Three sherds had burnish on the interior surface, and 20 had both interior and exterior burnish. Four sherds appeared to have exterior burnish only on the shoulder of the vessel, and burnish on vessel No. 8 x50 in fabric AG2 appeared to be localised on the lower body.

Burnished decoration occurred on a wide range of fabrics, but the finer sand tempered fabrics were inevitably more suitable for this kind of treatment. 117 (67.6%) of the sherds with burnished zone decoration of some kind were in fabric AN2 and 90% of all the sherds with burnish were in one of the range of sand tempered fabrics. The incidence of burnishing on fabric AN2 was thus 13.4% of the sherds in this fabric.

Other types of decoration were horizontal rilling (on two sherds of fabric CL4, possibly of late Iron Age date) and stabbed dots on a sherd of fabric SC5 (No. 1 x19). Stabbing also appears on No. 9 x7 in conjunction with oblique incised lines and internal burnishing. This and other decorated sherds were again in fine sand tempered fabrics. One sherd in AN2 had impressed dimples as well as overall burnishing, another in the same fabric (No. 10 x18) had simple ring impressions. Curvilinear burnished motifs were only evident on two sherds (both of fabric AN2), one a very small (unillustrated) fragment, the other a larger body sherd with horizontal and semicircular burnished line motifs on overall burnishing (No. 12 x55). Such sherds are more remarkable for their rarity in this assemblage than for any other

characteristic.

No significant differences were noted in the distribution of decorated sherds between Areas A and B.

Fabric	Burn'd zone exterior	Burn'd zone int & ext	Burn'd zone int only	Burn'd zone on shoulder	Burn'd line	Impres-sed	Incised	Comb	TOTAL
AN1	1								1
AN2	97	11	3	3	2*	1 & 1*			118
AN3	2			1					3
AA3		1							1
AA4	1								1
AM1	1								1
AM2	5	2							7
AI2							1**		1
AI3	4								4
AC3	1								1
AL2	3	1							4
AL3	1								1
AQ3	3								3
AV2	4	2							6
AV3	1								1
AG2	6								6
CN4	3								3
CA4	1								1
CL4								2	2
LN4	1								1
LA4	2								2
SA3	1								1
SA4	1	3							4
SC5							1		1
QN3	1								1
QN4	2								2
TOTAL	142	20	3	4	2	2	2	2	

Table 2: Decoration on middle Iron Age fabrics, quantification by number of sherds.
* sherd also has zone burnish
** sherd also has zone burnish and stabbing

Late Iron Age and Roman fabrics/wares

As mentioned above many of these were only defined at the level of principal subdivisions of the major ware groups. The occurrence of these fabrics is tabulated below, with summary descriptions. Material from Areas A and B is not listed separately because, with the exception of two sherds of fabric E80 and single sherds of fabrics E20, E60 and R10 (with a total weight of 33 gm), all the sherds in these fabrics were from Area A.

FABRIC	DESCRIPTION	No.sh.	%	Weight	%
F51	Oxfordshire colour coated ware	5	0.3	59	0.2
W20	Sandy white	40	2.3	266	1.1
W35	Fine sandy white	1	0.1	11	-
W36	Fine sandy white	43	2.5	427	1.8
W Subtotal		84	4.8	704	2.9
O10	Fine oxidised	4	0.2	18	0.1
O11	Fine sandy oxidised	1	0.1	16	0.1
O17	Fine sandy oxidised	1	0.1	31	0.1
O18	Fine sandy oxidised	6	0.3	19	0.1
O Subtotal		12	0.7	84	0.3
R10	Fine sandy reduced	49	2.8	534	2.2
R11	Fine sandy reduced	4	0.2	181	0.8
R19	Fine sandy reduced	1	0.1	4	-
R20	Coarse sandy reduced	22	1.3	166	0.7
R21	Coarse sandy reduced	116	6.6	2724	11.3
R30	Medium sandy reduced	87	5.0	712	3.0
R50	Medium sandy reduced, dark surfaces	5	0.3	13	0.1
R60	Limestone tempered reduced	9	0.5	59	0.2
R95	Savernake ware	368	21.0	6702	27.9
R Subtotal		661	37.7	11095	46.2
E10	Organic tempered 'Belgic'	13	0.7	109	0.5
E20	Fine sand tempered 'Belgic'	214	12.2	2315	9.6
E30	Medium/coarse sand tempered 'Belgic'	138	7.9	1588	6.6
E40	Shell tempered 'Belgic'	14	0.8	117	0.5
E50	Limestone tempered 'Belgic'	176	10.0	2019	8.4
E60	Flint tempered 'Belgic'	43	2.4	641	2.7
E70	Angular quartzite tempered 'Belgic'	18	1.0	260	1.0
E80	Grog tempered 'Belgic'	378	21.5	5048	21.0
E Subtotal		994	56.6	12097	50.3
TOTAL		1756		24039	

Table 3: Late Iron Age and Roman fabrics; sherd count and weight with percentages.

The colour-coated sherds (fabric F51) are the only ones which appear to be obviously of late Roman date. None was stratified within a feature fill. There were two distinct components in the white wares. Firstly, a group of coarse sandy sherds closely related to the sandy reduced fabrics R20 and R21, and secondly a group of much finer fabrics used for 'fine ware' types such as butt beakers. Oxidised wares were notably scarce on the site. This was principally a chronological consequence. Fabric O11 is the standard Oxfordshire fine oxidised product (cf Young 1977, 185, fabric 1) and it is possible that the sherds recorded here as O10 (the general code for fine oxidised wares) were also of this fabric. Fabrics O17 and O18 are both pre-Flavian fine wares identified at Abingdon, where they were used for butt beakers and related forms. The fine reduced fabric R19 also falls within this category.

Reduced wares were the dominant Romanised element in the assemblage. There were four main groupings of reduced wares. Firstly, fine fabrics included definite early Oxfordshire products (fabric R11) and other sherds probably from the same source (fabric R10). These and the second group, of distinctive coarse sandy fabrics R20 and R21, are likely to have been exclusively of early Roman date. The third group, of intermediate sandy fabrics (fabric R30) is the only one which could have continued in use through and after the 2nd century, though these too may have been of early Roman date at Hatford. The fourth and principal component of the reduced wares, however, was fabric R95, assigned to the Savernake industry, which accounted for almost 56% of all reduced ware sherds (60% by weight). The sherds assigned to this fabric varied quite considerably in the coarseness of their inclusions, but there seems to be little doubt about their source (see below, discussion). The likely date range for these sherds is from about the mid 1st to early 2nd centuries.

The E ware fabrics, combined under the convenience label of 'Belgic type' wares, amounted to 30% of the total sherds (27.7% weight) from the site (including the middle Iron Age material). They exhibited great variety in terms of inclusion types. The most important sub-group was the grog-tempered one (E80), reflecting the use of grog tempering as the principal characteristic of 'Belgic' pottery in SE Britain. Despite this, however, both fine and coarse sand and limestone tempering were significant within this ware group, and provide elements of continuity of ceramic tradition with the middle Iron Age fabrics. In particular, AN2, the dominant middle Iron Age fabric, was the principal component of the E20 group. Here the changes were in the use of the wheel and in diversification of vessel types rather than in alteration to the basic fabric. Indeed the next stage of the development is to the fully Romanised R30 fabric group. Here the basic fabric is still the same, but developments have occurred in firing techniques and in further evolution of the range of vessel types.

A further element of continuity in fabric type is shown by the E50 group. The 'limestone' temper encountered in these fabrics

consists principally of calcareous gravels, which were found in over 80% of instances of E50 sherds (usually as fabrics CN4 and CA4), though it should be noted that over half of these sherds were from a single vessel. Limestone did also occur, so elements of both C and L middle Iron Age fabric groupings continued in use, but unlike the fine (and medium) sandy fabrics this line of development was not carried through into the fully Romanised reduced wares, except in a very small number of sherds in the R60 group, fabrics which probably did not survive beyond the early Roman period.

The significance of the flint (E60) and coarse quartzite (E70) tempered groups, like that of their scarce ?middle Iron Age predecessors, is difficult to judge. Thirty three of the 43 flint tempered sherds were from a single bead rimmed jar, in a fabric in which grog also occurred. The E70 fabrics were much more varied, however, with angular quartzite occurring in combination with sand, limestone, flint, organic and grog tempering, as well as on its own. The heterogeneous nature of this group, and the fact that it is not dominated by any one fabric, suggest that it might be composed of fabrics which were not so much deliberate products as resulting from the use of poorly-prepared clays.

The principal component of the E ware group is the grog tempered (E80) fabrics. These appear to represent an alien tradition in this region, with no obvious antecedents in the early and middle Iron Age repertoire. As a tradition it is quite short lived, with two exceptions, one essentially from outside the region, the other clearly established within it. Firstly, the grog tempering of the reduced Savernake type wares, which is distinctive but at the same time recognisably of the same character as that of the E80 wares (in a few instances the distinction between E80 and R95 sherds was unclear - in such cases sherds were usually assigned to E80) continued in use into the 2nd century AD. Secondly, the use of grog tempering for large storage jars, probably of more local origin (but uncommon at Hatford), did remain a component of reduced coarse ware production throughout the life of the Oxfordshire industry (Young 1977, 202, fabric 1) and its initial development presumably stems from the introduction of grog tempering in the late Iron Age.

The E80 fabric group at Hatford contained a considerable variety of individual fabrics, with a wide range of fineness/coarseness being the most obvious variable. Detailed subdivision of this group would have been very time consuming and was therefore not attempted.

VESSEL TYPES

Some 226 rim sherds were noted, 88 in middle Iron Age fabrics and the rest of later date. The total figure for EVEs was 20.77, of which 4.20 (20.2%) were of middle Iron Age date, though the extent to which this is a meaningful figure is debatable (see above). The summary of the quantities of major vessel types by fabric is presented in table 4, and a more detailed breakdown of

jar types in Area A is given in table 5.

FABRIC	TYPE (quantification by EVEs)							
Area B	Jar	Jar/bowl	Beaker	Bowl	Bowl/dish	Dish	Unknown	TOTAL
A group	0.89							0.89
S group	0.10			0.22				0.32
E80			0.08					0.08
R10	0.03							0.03
Area B Subtotal	1.02		0.08	0.22				1.32
Area A								
A group	2.22						0.01	2.23
C group	0.15							0.15
L group	0.09							0.09
S group	0.27							0.27
Q group	0.11							0.11
G group	0.14							0.14
MIA subtotal	2.98						0.01	2.99
E10	0.12	0.06						0.18
E20	1.33		0.18		0.02	0.32	0.07	1.92
E30	1.16							1.16
E40							0.04	0.04
E50	1.14							1.14
E60	0.45							0.45
E70	0.19							0.19
E80	3.90					0.07	0.03	4.00
E subtotal	8.29	0.06	0.18		0.02	0.39	0.14	9.08
F51				0.07				0.07
W20	0.47							0.47
W36			0.49					0.49
O10	0.10							0.10
R10	0.63							0.63
R11	0.67							0.67
R20	0.14		0.10					0.24
R21	0.70					0.11		0.81
R30	0.68				0.03			0.71
R60	0.10							0.10
R95	3.03						0.06	3.09

Roman subtotal	6.52		0.59	0.07	0.03	0.11	0.06	7.38
Area A total	17.79	0.06	0.77	0.07	0.05	0.50	0.21	19.45
Site Total	18.81	0.06	0.85	0.29	0.05	0.50	0.21	20.77
%	90.6	0.3	4.1	1.4	0.2	2.4	1.0	100.0

Table 4: summary of vessel types by fabric; quantification by EVEs

FABRIC	CA	CB	CC	CD	CE	CG	CH	CI	CK	CN	TOTAL
A group	0.03	0.34		0.36		0.03	0.04				2.22
C group		0.09					0.06				0.15
L group		0.06					0.03				0.09
S group		0.03									0.27
Q group	0.08										0.11
G group							0.14				0.14
MIA subtotal	0.11	0.52		0.36		0.03	0.27				2.98
E10											0.12
E20			0.15		0.16		0.14				1.33
E30					0.06			0.07			1.16
E50				0.22			0.69				1.14
E60							0.39				0.45
E70				0.18			0.01				0.19
E80				0.83	0.91	0.23	0.56	0.23		0.10	3.90
Esubtotal			0.15	1.23	1.13	0.23	1.79	0.30		0.10	8.29
W20									0.40		0.47
O10											0.10
R10				0.53							0.63
R11				0.67							0.67
R20											0.14
R21			0.60								0.70
R30				0.30			0.05				0.68
R60											0.10
R95			0.87	0.31			0.64	0.62		0.14	3.03
Roman subtotal			1.47	1.81			0.69	0.62	0.40	0.14	6.52
TOTAL	0.11	0.52	1.62	3.40	1.13	0.26	2.75	0.92	0.40	0.24	17.79
% jars	0.6	2.9	9.1	19.1	6.4	1.5	15.5	5.2	2.2	1.3	
% all vessels											91.5

Table 5: Area A, quantities of jar types by fabric, quantification by EVEs. (Jar type codes are: CA bucket shaped; CB barrel shaped; CC narrow mouthed; CD medium mouthed; CE high shouldered ('necked'); CG globular; CH bead rim; CI angled everted rim; CK 'cooking pot type'; CN storage jar).
Note: in some cases the Total figure includes general jar types and therefore exceeds the sum of the other more specific types.

Few of the middle Iron Age rims represented large parts of vessels, so it is not possible to present an elaborate typology of these. There was a reasonable variety of detail in the rim forms, but most of them probably belonged to simple bucket and

barrel shaped vessel types. A few rims hint at a development of the necked jar or bowl form, and a few more are from bead rim jars which presumably belong at the very end of the middle Iron Age tradition. The majority of rims, however, could only be assigned to a general jar category. 57% of the middle Iron Age jars in Area A (in terms of EVEs, 71% of the rim sherds) were thus of unspecified 'jar' types, and all of the 24 jar rims from Area B fell into this category. The only other types noted amongst the middle Iron Age material were a slightly necked bowl in fabric SA4 from Area B and a small rim fragment of an uncertain type.

Almost three quarters of all EVEs in middle Iron Age fabrics were of sand tempered fabrics, a figure which reflects almost exactly the importance of these fabrics as a proportion of the sherd total of the middle Iron Age pottery. There were no particularly noteworthy correlations of fabric and vessel type. High shouldered (or necked) jars and globular jars occurred in sand tempered fabrics, but there was only one example of each type. Bead rimmed jars, already noted as probably very late in the middle Iron Age sequence, occurred in sand, calcareous gravel, limestone and grog tempered fabrics. Shell tempered fabrics, the second most significant group of middle Iron Age fabrics, were found only as generalised jar types. This may be a chronological characteristic, possibly reflecting a slightly earlier date for these fabrics than for most of the middle Iron Age material.

The dominance of the middle Iron Age assemblage by jar types (95% of EVEs and 86 out of 88 rims) was continued in the late Iron Age and later, when they amounted to almost exactly 90% of the 16.57 EVEs. With the exception of a small jar rim in fabric R10 and a butt beaker fragment in fabric E80 from Area B, all the late Iron Age and later vessels were found in Area A.

As with the middle Iron Age material a high proportion of the dominant jar group was still composed of vessels which could only be assigned to a generalised category. Such vessels amounted to 40.5% of the E ware jars (which totalled 8.29 EVEs, a substantial proportion of the total EVEs from the site). It was only with the later, Romanised material that the character of specific jar types became both better defined and consequently more readily identifiable. The generalised jar types were now only 21.3% of all jars. By this time the overall representation of jars was at its lowest, but was still 88.7% of EVEs.

The repertoire of vessel types in E wares abandoned the simple bucket and barrel forms of the middle Iron Age tradition. Within this ware group, however, the sand tempered E20 and E30 fabrics (which it has been suggested above saw little technological change into the late Iron Age), still had a relatively conservative range of vessel types since, while new forms such as narrow mouthed jars, high shouldered/necked jars and bead rim jars all appeared, as well as a beaker and a number of dish forms, the most common of the jar types was still the generalised category so common in the middle Iron Age. E50, E60, E70 and E80 fabrics all had far fewer of these types in relation to their

total output of jars. Medium mouthed jar types occurred in all of these fabric groups except E60, and bead rim jars were relatively important in the E50, E60 and E80 groups. In the last of these fabric groups they were accompanied by high shouldered/necked, globular, angled everted rim and large storage jar types. Dishes occurred very rarely in grog tempered fabrics and were otherwise found exclusively in fine sand tempered (E20) fabrics, along with the only possible example of a bowl in the whole of the E ware group. This is one of the clearest indications of a deliberate correlation of specific vessel types with particularly appropriate fabrics.

The more Romanised fabrics, amongst which Savernake ware (R95) has been somewhat arbitrarily included, show the widest range of vessel types, though this is still very heavily weighted in favour of jars. The single carinated bowl, an Oxfordshire colour-coated ware (fabric F51) vessel of Young's type C81, may be regarded as aberrant in this assemblage. Otherwise, exotic forms (represented by rims) were confined principally to examples of butt beakers in the fine sandy white ware fabric W36. Other non-jar types were a small ?beaker and a straight-sided dish in sandy reduced wares (fabrics R20 and R21 respectively) and an uncertain bowl/dish type in fabric R30. Apart from a rim of an unknown type in Savernake ware all the remaining vessels in Romanised fabrics were jars, including the only rim in an oxidised fabric. (A base, possibly from a butt beaker, occurred in fabric O17, and a small body sherd of a bossed butt beaker in fabric O18 is also noteworthy).

Generic medium mouthed jars, now the most common jar subtype, occurred particularly in the finer reduced fabrics R10, R11 and R30, whereas most other jar types were concentrated in the coarser fabrics; narrow mouthed jars in R21 and R95, bead rimmed and angled everted rim jars also in R95 and a 'cooking pot type' jar (in form like the standard black-burnished ware type) in W20, a sandy white ware which appeared to be closely akin to R20 and R21. The only examples of large storage jars from the site (apart from a single vessel in fabric E80) were found in coarse Savernake ware (R95). These were only represented by two rim sherds, but many more substantial body sherds of this type were also present.

USE, REPAIR AND REUSE OF VESSELS

Evidence of the surface condition of sherds was noted where this was relevant to the nature of their use. Sherds showing repair or hinting at reuse were also recorded.

Evidence for use was mainly in the form of soot and other burnt deposits, and limescale. Consistent and detailed recording of these characteristics, and particularly of burning, which could in any case occur incidentally after pots or sherds were out of use, would have taken more time than was available, so only fairly obvious examples were noted. Calcareous deposits, almost certainly the result of boiling of water in vessels, were noted

on the interior of 11 sherds from a minimum of six vessels. These were exclusively of middle Iron Age date and all but one were in fine, sand tempered fabrics (mainly AN2). External sooting (as opposed to generalised burning) was only positively identified on two vessels, on one of which it was combined with burnt residue (presumably of food) on the interior of the vessel. Burning/sooting was less common on late Iron Age and later vessels. It was noted on three vessels, in fabrics E20, R20 and R95. On the vessel in fabric E20 (No. 33 x36) it was combined with limescale. Exterior burning may have occurred on a few other sherds, but its significance was unclear.

Clear evidence for repair and reuse was confined to late Iron Age and later vessels. Rivet holes were recorded in eight sherds, all but one (in fabric R21) of Savernake ware (fabric R95). Presumably this hard fabric was suitable for drilling for rivets in a way which most other fabrics in use at Hatford were not. Evidence for reuse was seen on one vessel (in fabric E80) on which the original (possibly beaded?) rim had been knocked off and the top of the neck smoothed down to allow continued use. Two sherds, both in fabric E80, had been cut down and shaped for secondary use (illustrated Nos. 57 and 58 below), and a third sherd of Fabric R95 may also have been treated in this way.

In addition to these, two vessels, in fabrics E30 and E80, each had a small hole drilled in the base and a further two, in fabrics E80 and R95, had larger, irregular holes knocked through the base. The purpose of these holes is unclear, but they are a common phenomenon in this region, particularly in the late Iron Age and early Roman period. The different types of hole may indicate different functions, but this can only be surmised.

CONTEXTS AND PHASING

The correlation of pottery data with context types was examined fairly cursorily. In the absence of clear phasing data the significance of some of the correlations was unclear. The Area B data was probably too limited to produce meaningful patterns. In Area B 102 sherds came from unstratified groups and a further 75 from uncategorised deposits. Stone surfaces produced 54 sherds, possible structures 102 sherds, and 151 sherds (31.2% of Area B sherds) came from nine pit contexts. These last were briefly examined, but no firm conclusions were reached. The percentage of sherds in sand tempered fabrics was a little higher (c 82%) than the average for Area B, but this is probably explained as counterbalancing the concentration of shell tempered sherds in a 'possible structure' context (501). It was also noticeable that the average weight of sherds in the pits was slightly less than the overall average for Area B. Again the significance of this is not clear, but it certainly indicates that the pits were not used for the disposal of primary rubbish.

The Area A assemblage was larger and because of the greater degree of excavation there it included pottery from a wider range of feature types. As in Area B, pits produced more material than

other context types, accounting for 36.8% of Area A sherds, a figure not greatly different from that for Area B. The principal difference between the two areas, however, was the occurrence in Area A of ditch deposits, which produced 779 sherds (28% of Area A sherds), including the largest individual group on the site, from 162 (226 sherds weighing 3183 gm). All the most substantial groups from the Area (pits 29, 40, 60 and 185, respectively 66, 79, 131 and 162 sherds, and ditches 26, 32, 162 and 208, respectively 88, 55, 226 and 125 sherds) were of mid 1st century or later date. Despite the presence of substantial quantities of middle Iron Age sherds in Area A many of these occurred residually. Even the largest middle Iron Age groups consisted, with one exception, of less than 25 sherds. These included a number of groups from possible 'wall' features, all but one of which were probably of middle Iron Age date. No ditch groups were attributable to the middle Iron Age, though it is possible that in some cases the evidence for late Iron Age fills indicates the disuse of features which had been cut earlier. For example, ditch 215, thought to have been associated with a middle Iron Age roundhouse gully (211), produced a small group of grog tempered sherds (including vessel No. 48 x44). Apart from this case, however, the evidence may suggest a genuine change in the character of the site at the end of the Iron Age, perhaps reflecting an intensification of activity or a change of function, either of which might have required the excavation of boundary features.

As in Area B the size of sherds deposited in pits (12 gm for 93 sherds from middle Iron Age pits, c 13.6 gm for 929 sherds from later pits) was not significantly different from the site average, again suggesting that these features do not generally seem to have had a function for disposal of primary domestic rubbish.

CATALOGUE

The illustrated vessels are arranged very roughly in chronological order. The middle Iron Age material is presented first, sherds from Area A being followed by those from Area B. There are no context groups as such, with the partial exception of 503 in Area B, a partly excavated layer overlying the cobbled surface, which is clearly not a closed group (Nos. 13-16). The late Iron Age-early Roman material, all from Area A, is arranged as far as possible in a sequence which follows the descriptive text, although the small number of groups makes this of limited value. Significant assemblages are found in ditches 162 and 208 and in pit 185 (Nos. 17-22, 26-29 and 30-37 respectively). Vessels from a number of pits, each feature represented by only one or two pieces, are grouped together in fabric and then type order (Nos. 40-56).

In the catalogue entries the context number is given first, followed by fabric, surface treatment, vessel type, decoration and other pertinent details. HM and WM before the fabric or ware code = hand made or wheel thrown.

Middle Iron Age: Area A

1 x19. Unstratified. HM Fabric SC5, irregularly fired buff-brown to black with a grey core. Type C, slightly barrel shaped jar, with rows of stabbed dots below the rim and fine diagonal incised lines on the top of the rim.
2 x20. Unstratified. HM Fabric SN5, irregularly fired buff-brown to black. Type C, slightly barrel shaped jar.
3 x42. Context 214. HM Fabric CN4, very dark brownish-grey with dark grey core. Type CB, barrel shaped jar with sooting on the upper body.
4 x43. Context 31. HM Fabric AN2, black exterior and dark brownish grey interior with dark grey core, burnished on the top of the shoulder and rim. Type CB, barrel shaped jar.
5 x47. Context 247. HM Fabric AN2, dark grey-brown to black, with overall exterior burnish. Type C, jar, with calcareous scale on interior.
6 x48. Context 213. HM Fabric AN2, irregularly fired grey-brown to black with dark grey-black core. Type C, jar with sooting on the rim and internal burnt deposit.
7 x56. A Unstratified. HM Fabric AN2, yellowish-brown exterior, grey interior and dark grey-black core, burnished overall. Type CG, globular jar.
8 x50. Context 32. HM Fabric AG2, unevenly fired brown to black. Type CD, slightly necked medium mouthed jar. Typologically a transitional middle to late Iron Age vessel.
9 x7. Context 208. HM Fabric AI2, dark grey-brown to black, with internal burnish. Angled body sherd with impressed circular dots on the angle and broad incised oblique lines with irregular stab marks to each side above. No close parallels have been found for this decorative scheme, but the incised and stabbed elements are reminiscent of those on a round bodied bowl from Old Marston (Harding 1972, plate 58A). The fabric of the Hatford sherd is consistent with a middle Iron Age rather than an earlier date, however (cf ibid., 78-79).
10 x18. Unstratified. HM Fabric AN2, dark brownish-grey. Small fragment, perhaps from a globular bowl, with a curving burnished line defining a zone of impressed rings, rather like an example from Frilford (Bradford and Goodchild 1939, 22, no. 82).
11 x46. Context 119. HM Fabric GV4, black, burnished on the top of the rim. Type CH, bead rim jar.

Area B

12 x55. Context 503. HM Fabric AN2, very dark brownish-grey to black, with very dark grey core. Body sherd of large, quite thin-walled vessel burnished overall. Over the zone burnish is a lightly-tooled linear burnish scheme of arcades above a horizontal line.
13 x53. Context 503. HM Fabric AC2, orange-brown with a dark grey core. Type C, jar of uncertain form. The rim is similar to one from Watkins Farm in a coarse sandy fabric (Allen 1990, 33, no. 17).
14 x54. Context 503. HM Fabric AN2, dark red-brown exterior, with dark brownish-grey interior and core, possibly burnished externally. Type C, jar.

15 x51. Context 503. HM Fabric SA4, black with a dark grey-brown core. Burnished overall on the exterior and the inside of the rim. The remainder of the interior is smoothed. Type H, a finely finished bowl. The form is similar to a type D1 bowl from Ashville (De Roche 1978, 59, no. 238), though this vessel was in a sandy fabric.
16 x52. Context 503. WM Fabric E80, grey-brown. Type EA, butt beaker, burnt on the rim.

Late Iron Age and early Roman: Area A

17 x33. Context 162. HM Fabric E50, buff-brown to dark brownish-grey, with burnish on most of the body. Type CH, bead rim jar/bowl. This is a transitional mid-late Iron Age piece.
18 x30. Context 162. WM Fabric E80, dark grey-black with brownish-black core. Burnish on rim, neck and shoulder. Type CE, necked jar, with a hole knocked through the base.
19 x31. Context 162. WM Fabric R95, light grey. Type CH, bead rim jar, with rilling on the body.
20 x32. Context 162. WM Fabric R95, light grey, burnished on rim, shoulder and upper body. Type CI, angled everted rim ?jar, perhaps a developed form of butt beaker, cf Swan 1975, 48 no. 4.
21 x28. Context 162. WM Fabric W36, cream-white, with pinkish-grey core, burnished overall. Type EA, butt beaker.
22 x29. Context 162. WM Fabric O17, light yellow-orange, lower part burnished overall. Base of beaker with rouletted decoration above groove on the lower body.
23 x25. Context 26. WM Fabric E20, dark grey exterior, with mid grey interior and core, burnished on the shoulder and the top of the rim. Type C, large medium mouthed jar. The slightly dished rim and the occurrence of groups of oblique burnished lines on the shoulder are reminiscent of Young type R24.12 (Young 1977,
24 x24. Context 26. WM Fabric E20/R30, medium grey with a light grey core, with faint traces of overall burnish. Type EG, carinated beaker or jar, probably an early version of Young's reduced type R26 (Young 1977, 215-216).
25 x23. Context 216. WM Fabric E50, dark grey to black, with slight burnish on the top of the rim. Type CH, bead rim jar.
26 x4. Context 208. WM Fabric E80, very dark greyish-brown. Burnished on the top of the rim and on the shoulder to below the girth. Type CE, squat, necked jar.
27 x6. Context 208. WM Fabric E20, very dark grey-black, with burnish on the top of the rim and on the shoulder. Type CC, narrow mouthed jar (Young 1977, R15).
28 x3. Context 208. WM Fabric R95, mid grey with lighter grey core. Roughly burnished on the shoulder with very faint traces of a narrow band of oblique burnished lines. Type CC, narrow mouthed jar, with hole knocked in base.
29 x5. Context 208. WM Fabric W36, pinkish white, probably burnished overall. Type EA, butt beaker, with elaborate decoration in bands separated by cordons defined by grooves. The central band, of vertical and oblique lattice filled strips, is sharply incised, a technique paralleled on other sherds in comparable fabrics from Abingdon Vineyard. A date in the third quarter of the 1st century AD is likely.
30 x41. Context 185. WM Fabric E80, very dark grey-black with mid

grey core. Type CD, medium mouthed jar.
31 x40. Context 185. WM Fabric E30, very dark grey-black, with burnish on neck and rim. Type CE, necked jar.
32 x39. Context 185. WM Fabric E40, irregularly fired orange-brown to black with very dark brown-black core. Burnish on upper part of the surviving body. Footring base, probably from a necked jar/bowl.
33 x36. Context 185. WM Fabric E20, medium grey, burnished down to just below the girth grooves. Type CE, necked jar/bowl.
34 x35. Context 185. WM Fabric E20, light grey, with burnish on the top of the rim and upper shoulder. Type CH, bead rim jar with rilled body.
35 x38. Context 185. WM Fabric E20, irregularly fired buff-brown to black, with overall interior and exterior burnish. Type JA, (fairly) straight sided dish.
36 x37. Context 185. WM Fabric R10, medium grey with a light grey core, burnished overall. Type CD, medium mouthed jar as R38 (Young 1977, 219).
37 x34. Context 185. WM Fabric R95, light grey exterior and buff grey interior. Type CD, medium mouthed jar.
38 x49. Context 6. HM Fabric E60, unevenly fired very dark grey-brown and buff, with burnish on upper shoulder and rim. Type CH, bead rim jar.
39 x2. Context 222. WM Fabric R11, dark grey with lighter grey core, burnished overall. Type CD, medium mouthed jar (Young 1977, R24).
40 x27. Context 60. WM Fabric E30, mid grey with light grey core. Type C, jar, exact type uncertain.
41 x14. Context 241. WM Fabric E30, black, with overall burnish. Type CI, small everted rim jar or beaker.
42 x15. Context 103. WM Fabric E50, dark grey-brown. Type CD, medium mouthed jar.
43 x16. Context 103. WM Fabric E50, dark grey with a light grey core. Overall burnish on exterior. Type CD, medium mouthed jar.
44 x26. Context 60. WM Fabric E80, very dark brownish-grey. Type C, jar, exact type uncertain.
45 x45. Context 119. WM Fabric E80, brown-black unevenly fired. Type CI, angled everted rim jar.
46 x11. Context 138. WM Fabric E80, black with a dark grey core. Type CD, medium mouthed jar.
47 x8. Context 12. WM Fabric E80, brown to dark grey-black, unevenly fired, with overall burnish. Type CD, medium mouthed jar.
48 x44. Context 215. WM Fabric E80, dark grey-black. Type CH, bead rim jar.
49 x17. Context 103. WM Fabric E80, light grey-brown surfaces with a dark grey to black core. Slight traces of burnishing on the top of the shoulder and rim. Type CH, bead rim jar, with only slightly defined rim.
50 x10. Context 159. WM Fabric E80, light buff-grey with dark grey-brown core. Light burnishing on the shoulder and over the ridges on the upper body. Type CH, bead rim jar.
51 x1. Context 40. WM Fabric R21, light grey, with faint traces of burnishing on the shoulder. Type CC, narrow mouthed jar (Young 1977, R15).
52 x9. Context 20. WM Fabric R95, light grey exterior and core

and buff interior. Type CD, medium mouthed jar.
53 x22. Context 100. WM Fabric R95, buff-grey with light grey core. Type CH, bead rim jar.
54 x13. Context 99. WM Fabric R21, light grey with a dark grey core. Type JA, straight, outsloping sided dish.
55 x21. Context 52. WM Fabric W20, white, with partly burnt exterior, burnished on the lower body and base. Type CK, 'cooking pot type' jar, falling within the range of forms grouped together by Young as W33 (Young 1977, 103).
56 x12. Context 138. WM Fabric W36, ?white, mostly burnt grey, with overall burnish. Type EA, butt beaker with noticeable interior overhang at the back of the rim.
57. Context 22 SF117. Fabric E80. Irregular circle of which about half survives, with smoothed outer edge and drilled central hole c 3 mm in diameter. Max. diameter c 45 mm. The thickness varies from 8-12 mm. This and the small size of the central hole argue against the use of this sherd as a spindle whorl.
58. Context 185 SF271. Fabric E80. Sherd roughly trimmed to a circular shape, diameter c 37-40 mm. Thickness c 8 mm. Possibly a counter or gaming piece.

CHRONOLOGY

Some aspects of chronology have already been touched on in the preceding description and discussion, but it is necessary to consider the question in more detail, and in particular to explain the basis of a number of assumptions which have informed various aspects of the discussion.

Middle Iron Age

Within the present assemblage the earliest material appears to be of middle Iron Age date. The early Iron Age pottery of the region would normally be dominated by shell tempered fabrics. These are certainly present at Hatford, but never in substantial quantities. In Area B, where the assemblage is effectively an Iron Age one uncontaminated by later material, the shell tempered component is only just over a quarter of both sherd count and weight. Within this assemblage there is only one context group (501) of Iron Age date in which shell tempered sherds outnumber sand tempered ones. In 501, 60 out of 82 sherds were shell tempered. Nevertheless, neither of the two vessels represented by rim sherds in this group was of a form significantly distinguishable from those found in sand tempered fabrics.

In the present Hatford assemblage as a whole there is a total absence of tripartite vessel forms, or of vessels with angled shoulders which might be considered to be of early Iron Age date. Equally, no sherds in any fabric have the fingertip decoration which can also be characteristic of this period. However, both of these characteristics were present, albeit in small quantities, amongst material recovered in the evaluation phase of the project. Forty-six of the 99 sherds from Trench W, within the later Area B, were in shell-tempered fabrics and five of these had characteristics suggestive of a late Bronze Age-early

Iron Age date (D Knight archive report, see above). Clearly the sample from the later excavation of Area B was insufficiently large to produce an entirely representative assemblage. The emphasis of the Area B assemblage is still principally in the middle Iron Age, however. Context group 501, with an unusually high proportion of shell tempered sherds, may be earlier than the other features examined on the site, and perhaps of early Iron Age date, but all the other context groups are likely to be later. The three evaluation contexts within Area B which produced the late Bronze Age-early Iron Age sherds were all probably of middle Iron Age date. Whilst late Bronze Age-early Iron Age pottery is present in the vicinity of the principal recently excavated areas, therefore, it occurs in such small quantities that the present assemblages, and particularly that from Area A, can be considered to be almost entirely of middle Iron Age and later date.

Late Iron Age

This term has been used above as a shorthand to describe fabrics in the E ware group (and the forms occurring in them). The date of the introduction of the grog tempered fabrics, which it has already been suggested represent an alien technological tradition, is still an open question. The Hatford assemblage adds little hard data to the resolution of this question. An examination of the associations and occurrences of the principal ware groups in Area A shows, however, that there are no significant contexts in which other E ware subgroups appear unaccompanied by E80 (ie grog tempered) and/or R95 (Savernake) sherds. This would seem to indicate that there was not a phase of ceramic evolution in which potters using the traditional sand and calcareous tempered fabrics had begun to adopt a late Iron Age repertoire of forms before the introduction of grog-tempered fabrics. The corollary of this is that the appearance of new, late Iron Age forms cannot be separated from the appearance of grog-tempered fabrics, and that the two events were probably intimately connected. The adaptation of local fabrics to new forms would thus be seen as an imitative move, but one which was probably broadly contemporary with the new developments rather than lagging significantly behind them.

The association of the E wares with fabric R95 (Savernake ware) is of particular interest. 847 E ware sherds (85.6% of such sherds) occur in contexts in which they are directly associated with R95 and a further 27 E ware sherds are associated with later Romanised fabrics. That is to say that 88.3% of the total E ware sherds from Area A are associated with material conventionally of 'later' date. In terms of the stratified material this figure is even higher, at 94.5% Moreover, of the 25 context groups in which E wares are the latest component (ie, occurring without R95 or other Romanised fabrics), only five (ditches 25, 214, 215 and 221 and pit 241) produced more than two sherds of such wares. Most of these groups contained only one or two sherds in total and the absence of later material is thus not necessarily significant. The evidence therefore indicates a remarkable degree of association between E wares and fabric R95, to the extent that

would suggest at least a considerable degree of contemporaneity in their use. There is certainly no indication of a significant E ware 'ceramic phase' predating the introduction of R95, because if this had been the case more contexts would surely have produced groups in which E wares were the dominant (and latest) component. It follows that if the date of the introduction of R95 can be established this provides at least a substantial clue to the dating of E wares at Hatford.

The date of Savernake ware has been the subject of some debate. Swan has suggested that the industry owes its origins to the need of the Roman army for pottery (1975, 45) and in placing the production site of Oare at the beginning of the sequence of Savernake production sites implied a post-conquest date for the entire industry, with consequent effects for sites such as Bagendon where Savernake Ware appeared in what had previously been considered to be pre-conquest contexts (ibid., 61). The most recent work in the Bagendon area has tended to support the later dating of the site (Trow 1988, 76), though some elements of the pottery assemblage still suggest a pre-conquest date for parts of the Bagendon sequence (Dannell 1977; Rigby 1988, 62-63). The situation at Bagendon remains unclear, but Trow's view is that both there and at Salmonsbury the earliest 'Belgic type' pottery, which would include Savernake type ware, may not date before the Roman conquest (Trow 1988, 76). Alternatively, however, a pre-conquest date for some Savernake wares can be suggested on the basis of unpublished evidence from a number of other Gloucestershire sites, including pre-military levels at Kingsholme (J Timby pers comm).

As far as the Hatford evidence goes it is difficult to accept, in a site where there is no evidence for a break in the settlement or ceramic sequence from middle to late Iron Age, that the whole of the E ware phase should be assigned to the post-conquest period. Some of the material in these wares, and possibly a majority of it, will have been produced and in use after the conquest, but not all. However there is no need to accept the extended chronology favoured by Harding (1972, summarised on 129), based as this is largely on his reassessment of the key assemblages at Langford Downs (Willliams 1946-7) and Linch Hill Corner, Stanton Harcourt (Grimes 1943-4; cf Harding 1972, 119-121) but coloured by the necessity to link the pottery to an historical model for the Belgic invasion of Britain. At Linch Hill it may be noted that the period II assemblage (the earliest pottery on the site) included two bead rim jars in "hard fired grey ware with black surface" and "hard fired ware with grey outer surface and lighter grey core" (Grimes 1943-4, 53-55, nos. 4 and 6 respectively). These descriptions, though not very specific, would certainly be consistent with Savernake ware, as would the forms (cf eg Swan 1975, 53, no. 29; Hodder 1974, 68, nos 7-11). Moreover, the pottery of the following period included, along with two 'Belgic type' necked jars, "a few fragments of a large grey-ware storage jar" (ibid., 56). This, also, sounds potentially like a Savernake product, or some other Romanised type. Period IV included Romanised coarse wares. If the proposed identification of Savernake wares is correct (and it is

emphasised that the sherds have not been physically reexamined) the Linch Hill assemblage would potentially belong to the very latest Iron Age-early Roman period. The best dating evidence from more recent excavations in the region is from Abingdon Vineyard (unpublished), where groups independently dated by fine wares and samian to the Claudian-Neronian period contain a high proportion of grog-tempered vessels (including some Savernake wares). It has not yet been possible, however, to examine a sequence of deposits containing such vessels to see if they are always associated with post-conquest fine wares.

The question remains, therefore, how early could Savernake ware have appeared in this part of the Upper Thames? Certainty is impossible, but even on the most generous estimate it is unlikely to have been more than about 20 years before the Roman conquest. If so, and if the close association of Savernake wares with other 'Belgic type' fabrics and forms has been correctly observed, the introduction of these, at least in the area around Hatford, must have been a very late event in the later Iron Age.

Early Roman

Savernake Ware forms the main thread of ceramic continuity between the 'late Iron Age' and the early Roman periods. The latter is marked by the appearance of Romanised coarse ware fabrics, particularly reduced wares. Some of these fabrics may date from the later 1st century AD rather than earlier (eg R11, cf Young 1977, 203, his fabric 4), but others (eg the sandy R20 group) could perhaps have been in use as early as the middle of the 1st century. Such fabrics occur widely, for example, in pre-Flavian groups at Abingdon Vineyard.

At Hatford there is almost no pottery which need have dated after the first half of the 2nd century (the few, unstratified examples of Oxfordshire colour-coated ware (fabric F51) are obvious exceptions to this) and there are strong grounds for suggesting that the bulk of the early Roman assemblage should be dated to the 1st century. The evidence is largely negative. The total absence of samian ware is surprising, and would be inconceivable if the settlement had lasted until the mid-late 2nd century (this situation is exactly paralleled in the assemblage from Hinksey Hill, occupied, like Hatford, from the early Iron Age through to the early 2nd century AD (Hawkes 1930, 381)). Indeed the absence of Flavian South Gaulish samian is difficult to account for, though it cannot indicate a lack of occupation of this date. Other notable absentees are the standard Oxfordshire white wares (including mortaria), the production of which is considered to have commenced around AD 100 (Young 1977, 61). There is also no black-burnished ware, which on the generally accepted chronology would be expected in this area from c AD 120 onwards. There are no vessel types which need date later than the late 1st-early 2nd century at the latest (with the obvious exception of the Oxfordshire colour-coated types). Even allowing for the relatively low status of the assemblage (see below) the cumulative evidence of these absences is compelling. Activity in Area A at Hatford had surely ceased by the mid 2nd century at the

latest, and probably ended in the first quarter of the century.

GENERAL DISCUSSION

The Hatford assemblage is in many ways typical of groups of its date from the Upper Thames Valley, but it has some characteristics which mark it out as particularly significant. The chief of these is the high proportion of Savernake ware, the close association of which with late Iron Age 'Belgic type' wares can be used to suggest a generally late dating for these.

Evidence from an evaluation trench within the extent of excavated Area B, from two other evaluation trenches NW and SE of the main excavated areas, and from earlier observations in the immediate area, make it clear that there was a late Bronze Age-early Iron Age component in the settlement at Hatford, though the scale of this is unknown at present. The present excavations, however, suggest more or less intensive activity only from the middle Iron Age onwards. This activity lasted, on present evidence, only into the early part of the 2nd century AD, though the occurrence of stray sherds of Oxfordshire colour-coated ware in the assemblage suggests the presence of settlement of late Roman date nearby. The contrasts between the assemblages in the adjacent Areas A and B, together with the hints of activity both earlier and later than that directly evidenced within the excavated areas, might suggest that the settlement pattern within the locality was a fairly fluid one, with relatively frequent shifts of focus.

Much of the middle Iron Age assemblage can be placed broadly in the later part of that period, on the basis of characteristics of both fabric proportions and vessel forms. The trend of the gradual reduction of the proportion of shell tempered fabrics from early to middle Iron Age assemblages in the region has been amply demonstrated (Lambrick 1984, 174). The generally low proportions of such fabrics in the Hatford assemblage suggest a later rather than an earlier date in the middle Iron Age for the bulk of the handmade material. The assemblage of this date was characterised principally by fine, sand-tempered fabrics occurring in simple jar forms which do not lend themselves to useful classification. Very few of these vessels carried decoration which was indicative of the style zones discussed by Lambrick (1984, 170-173). It may be noted that tooled band decoration, considered by Lambrick to be particularly characteristic of the Corallian ridge (ibid., 170), is absent here, but the size of the sample may be too small for this to be significant.

Comparable assemblages within the region come mainly from sites lying north of the Thames and located principally on the gravel terraces. These include Watkins Farm (Allen 1990, 32-46), which shows many similarities with Hatford, with sandy tempered fabrics much the most important single fabric group. Shell-tempered fabrics were relatively poorly represented, though their exact total is unclear since detailed quantification is not given for the individual component fabrics of the 'calcareous' group, some

of which contained shell and others limestone (ibid., cf 32 and 88). Mixed sand and calcareous fabrics were also quite common, as at Hatford. The range of forms at Watkins Farm was also very similar to that at Hatford, but was more varied. This, however, probably reflected the larger assemblage size rather than any other more significant variations. A very similar range of forms occurred at Mingies Ditch (Wilson 1993), but a detailed breakdown of fabric quantities was not presented. A striking feature of this assemblage, however, which contrasts both with Watkins Farm and with Hatford, is the absence of burnished vessels, the significance of which is as yet unclear (ibid., 72). With the exception of this distinction, the Mingies Ditch assemblage shares the principal characteristics of the Iron Age pottery of Watkins Farm which are also common to other groups within the area (cf Allen 1990, 42). There is still, however, a shortage of published material from sites lying north of the Thames but adjacent to the Corallian ridge.

South of the river lies Farmoor, with an assemblage of roughly comparable size to that from Hatford, but clearly divided into two distinct phases (Lambrick 1979, 37), the later of which has broad similarities with the Hatford material. It is notable that the average sherd size at Farmoor was even smaller than that at Hatford (roughly 8 gm (Lambrick 1979, 35), as against c 13 gm), whereas at Watkins Farm it was considerably larger (20.8 gm), perhaps reflecting in part the occurrence of deposits containing relatively newly-broken pottery (Allen 1990, 32-34). Apart from Farmoor the only excavated assemblages within the area located south of the confluences of the Thames and its major tributaries are at Abingdon, from Ashville (DeRoche 1978) and from The Vineyard, and at Frilford (Bradford and Goodchild 1939). Only the latter provides comparanda from the Corallian ridge itself, but in the absence of quantified data the assemblage is more remarkable for the well-known decorated globular bowls than for other characteristics. The degree of similarity between the range of fabrics at Frilford and Hatford cannot therefore be assessed, though the middle Iron Age vessel forms from Frilford seem generally consistent with those from the sites in the region already discussed. Although Hatford has not produced decorated globular bowls in the Frilford manner there is a direct parallel between a fragment with impressed circle decoration and a similar piece from Frilford (ibid., 22-23, no. 82). On present evidence, however, there are no outstanding differences between the Hatford material and that from sites to the east or to the north of the Thames, either in terms of the likely range of sources of the pottery or of the repertoire of vessel types.

Continuity of occupation and local/regional ceramic production between the 'middle' and 'late' Iron Age phases at Hatford has been assumed here, though there were radical changes at the time of this transition. These occurred both in terms of the introduction of new ceramic traditions (represented by the use of grog tempering and new vessel types) into the local repertoire, and the adaptation of the latter (in part) in imitation of these trends, and also in the introduction to the site, for the first time on any scale as far as can be

determined, of vessels produced outside the region (ie the Savernake wares). This development may have taken place only quite shortly before the Roman conquest at the earliest. If this was a pre-conquest development, the first post-conquest ceramic innovation evidenced in the Hatford assemblage was probably the introduction of a small number of fine wares, particularly butt beakers. The production of these may, on the basis of the evidence from the Vineyard site, have taken place somewhere near Abingdon in the period shortly after the conquest. Most of the exotic forms in fine oxidised red and white fabrics at Hatford can be attributed to this production, which has stylistic affinities with comparable production at Chichester. (Timby 1993)

The grog tempered Belgic type fabrics probably dominated the assemblage in the pre-Flavian period, though more Romanised fabrics, particularly sandy reduced wares, were already appearing at this time. In the latter part of the 1st century the assemblage came to be dominated by Romanised reduced wares, including examples of the very fine fabrics which are a characteristic of Oxfordshire production in the late 1st-early 2nd centuries. There is no conclusive ceramic evidence of activity beyond this time. The absence of common fabrics with date ranges from the early 2nd century onwards (including some Oxfordshire products) has been taken to indicate that occupation within the excavated areas had ceased by about the middle of the 2nd century at the latest.

This situation is broadly paralleled elsewhere within the region, but detailed examination of the evidence indicates a number of minor but potentially significant variations. For example, at Watkins Farm, Northmoor, the early Roman pottery assemblage probably continues a little later than at Hatford. More significant, however, is the evidence for a break in occupation there suggested by a substantial absence of late Iron Age-earliest Roman material, with the Roman assemblage dated from the late 1st century onwards (Raven 1990, 49). At Farmoor there was also a break in the ceramic sequence corresponding to the late Iron Age-early Roman period, with a resumption of activity in the ?early 2nd century which then continued through to the 4th century (Lambrick and Robinson 1979, 72). A rather similar pattern can be seen at Frilford, where the apparent absence of late Iron age-early Roman material surely cannot be taken to indicate vigorous cultural resistance to Belgic ceramic fashions (Harding 1972, 123) but must indicate some sort of break in the occupation sequence.

In contrast, the pottery from Linch Hill Corner, Stanton Harcourt, indicates a brief late Iron Age to early Roman period of activity (Grimes 1943-4) which as has been argued above may have commenced almost as late as the conquest period. Similarly, at Old Shifford Farm (even closer to Hatford), site L produced just under 1000 sherds of pottery almost exclusively of later Iron Age character. Significantly, this group also contained some Savernake ware sherds. Middle Iron Age sherds and Romanised material of late 1st-2nd century date were almost entirely absent. Thus the date range of this phase of occupation was

relatively short and the later Roman activity on the site occurred in a spatially discrete area (Timby 1992). There is thus no uniform pattern of development or sites in the region. A degree of dislocation of the settlement pattern in the 1st or early 2nd century seems to be a common but not a universal feature. In the case of Watkins Farm, Farmoor and Frilford this dislocation occurs before the Roman conquest, with a later 1st-2nd century resumption of activity, relatively short-lived in the case of Watkins Farm. In the case of Hatford, in parallel with sites such as Hinksey Hill (Myres 1930), Thornhill Farm (Fairford, Glos) and Gravelly Guy (Stanton Harcourt), and perhaps also at The Vineyard (Abingdon) dislocation probably occurs in the early-mid 2nd century after an extended period of occupation. Elsewhere, ceramic traditions continue to evolve right through the Iron Age and Roman periods (eg at Yarnton), but even here there is not absolute continuity of occupation site. In ceramic terms, the sites with shorter occupation periods can be more useful than those with a long chronology in helping to determine the probable date range of particular fabrics and forms.

Even allowing for the restricted chronological range of the early Roman settlement at Hatford the ceramics indicate a low status site with few trading connections outside the immediate area. The relative absence of fine and specialist wares (the latter including amphorae, mortaria and flagons, all of which are completely absent from the site, even as body sherds) and the lack of table wares (in which regard the total absence of samian ware is particularly remarkable) all argue a strictly limited range of functions for pottery at Hatford. This may reflect particular functional characteristics of the site, but if so it is unclear what these were. The total number of late Iron Age and early Roman sherds which could be considered fine wares (in fabrics F51 (intrusive here), W35, W36, O17, O18 and R19) is only 57 (3.2%), and even including the fine reduced wares R10 and R11 the total only rises to 109 sherds or 6.2% of the assemblage. This appears to be a very low figure, although directly comparable data are generally lacking at present. Figures from the early Roman assemblage at Watkins Farm, Northmoor, however, are significantly higher, with percentages of sherd totals for 'all fine wares' of 13% in site A and 30% in site B (Raven 1990, 47). These figures do not include mortarium and amphora sherds, both of which are present in small quantities. While the site B figure is inflated owing to the presence of numbers of small sherds (ibid.) and the chronological emphasis of the groups is slightly later than that for Hatford (indicated principally by the much lower proportion of grogged wares), the difference between the assemblages is still striking. In terms of weight, which Raven considered was a more reliable measure (ibid.), the figures for Watkins Farm sites A and B fine wares are 9% and 16% respectively (still excluding amphora and mortaria): the equivalent figure for Hatford, including the fine reduced wares, is 5.3%.

The early Roman fine wares at Hatford are all of local origin, with the most common element, the white and fine oxidised and reduced butt beakers (and perhaps other beaker forms) probably

manufactured somewhere near Abingdon (Timby 1993; cf above). This production included bossed beakers, a local speciality found at Ashville (De Roche 1978, 66-67, nos. 373 and 374), Abingdon Vineyard (Timby 1993) and Dorchester on Thames (Frere 1964, 132-133, no. 9; Wilson 1984, 156-158, nos. 13 and 21). The absence of early Roman imported fine wares at Hatford, contrasting with their presence (albeit in small quantities) at places like Abingdon and Dorchester, serves to underline the relatively limited trade networks to which the site was linked. Savernake ware was in fact the most far-flung component in the ceramic assemblage.

REFERENCES

Allen, T G, 1990, An Iron Age and Romano-British enclosed settlement at Watkins Farm Northmoor, Oxon, Oxford Univ Committee for Archaeol, Oxford

Dannell, G, The samian from Bagendon, in J Dore and K Greene (eds) Roman pottery studies in Britain and beyond, Brit Archaeol Rep Supplementary Series 30, 229-234

De Roche, C D, 1978, The Iron age pottery, in M Parrington, The excavation of an Iron Age settlement, Bronze Age ring-ditches and Roman features at Ashville Trading Estate, Abingdon (Oxfordshire) 1974-76, Counc Brit Archaeol Res Rep 28, 40-74

Frere, S, 1964, Excavations at Dorchester on Thames 1962, Archaeol J 119 (for 1962), 114-149

Grimes, W F, 1943-4, Excavations at Stanton Harcourt, Oxon., 1940, Oxoniensia 8 and 9, 19-63

Harding, D W, 1972, The Iron Age in the Upper Thames Basin, Oxford

Hawkes, C, 1930, Report on the pottery, in Myres 1930, 377-381

Hodder, I, 1974, The distribution of Savernake ware, Wiltshire Archaeol and Nat Hist magazine 69, 67-84

Lambrick, G, 1979, The Iron Age pottery, in G Lambrick and M Robinson, Iron Age and Roman riverside settlements at Farmoor, Oxfordshire, Counc Brit Archaeol Res Rep 32, 35-46

Lambrick, G, 1984, Pitfalls and possibilities in Iron Age pottery studies - experiences in the Upper Thames Valley, in B Cunliffe and D Miles (eds), Aspects of the Iron Age in Central Southern Britain, Oxford Univ Committee for Archaeol Monograph 2, 162-177

Myres, J N L, 1930, A prehistoric settlement on Hinksey Hill, near Oxford, J Brit Archaeol Assoc 36, 360-390

Raven, S, 1990, The Romano-British pottery, in Allen 1990, 46-52

Rigby, V, 1988, Gallo-Belgic wares, in Trow 1988, 60-63

Swan, V G, 1975, all reconsidered and the origins of Savernake ware in Wiltshire, Britannia 6, 36-61

Timby, J, 1992, Old Shifford Farm, Oxfordshire, the pottery, Unpublished archive report for OAU

Timby, J, 1993, Abingdon Vineyard, pottery report, Unpublished archive report for OAU

Trow, S D, 1988, Excavations at Ditches hillfort, North Cerney,

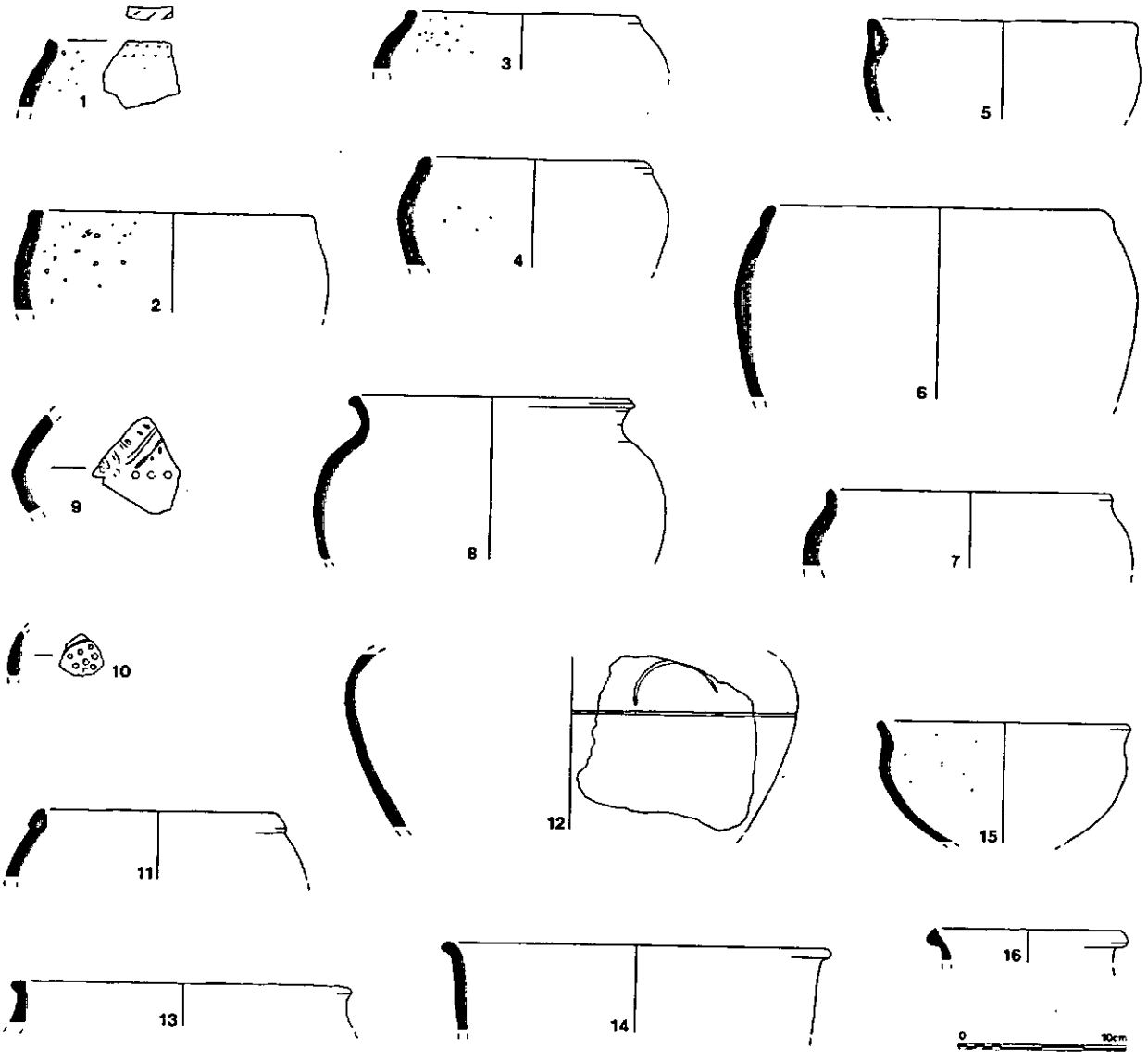
Gloucestershire, 1982-3, Trans Bristol and Gloucestershire Archaeol Soc 106, 19-85

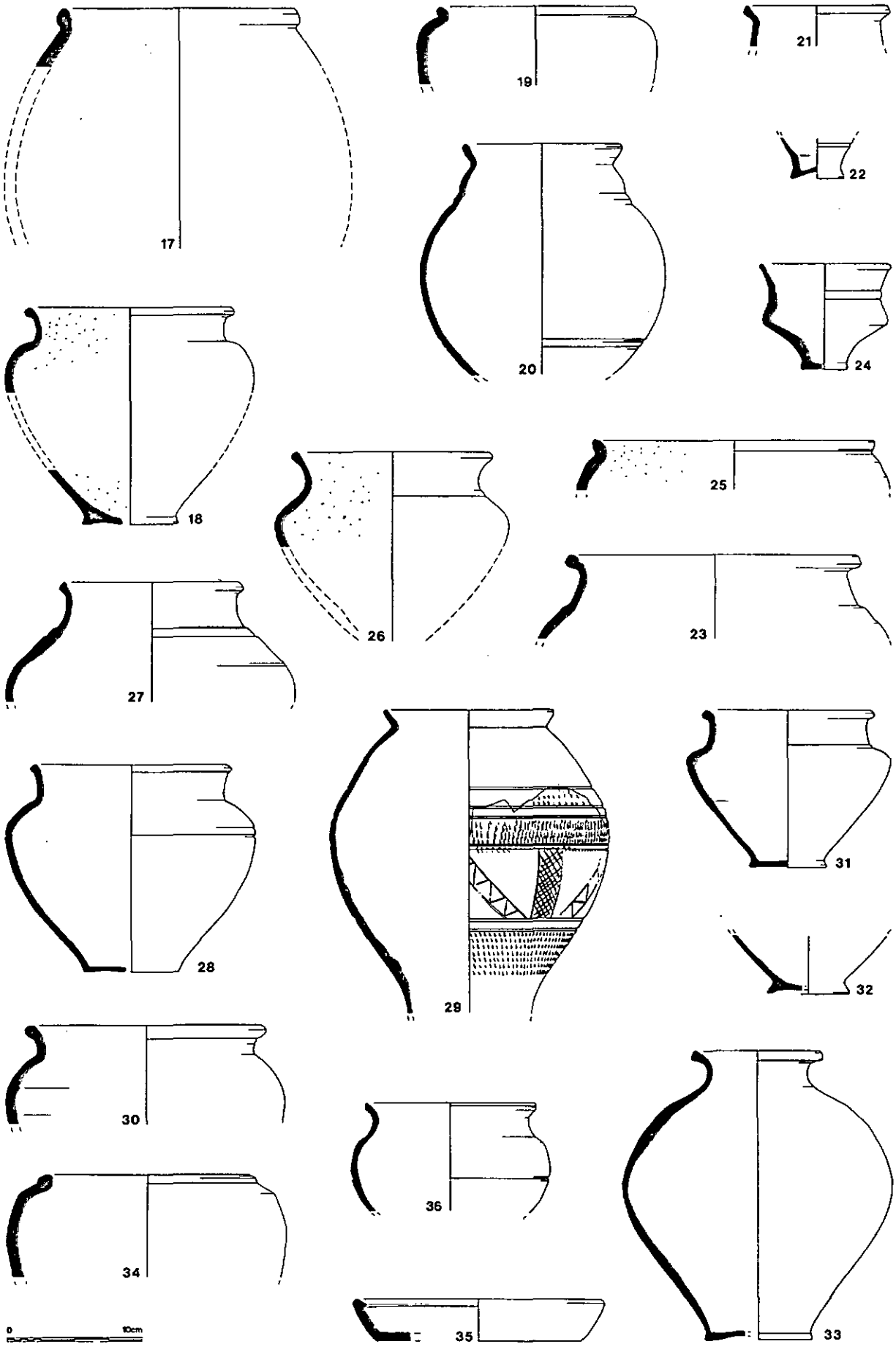
Williams, A, 1946-7, Excavations at Langford Downs, Oxon. (near Lechlade) in 1943, Oxoniensia 11 and 12, 44-64

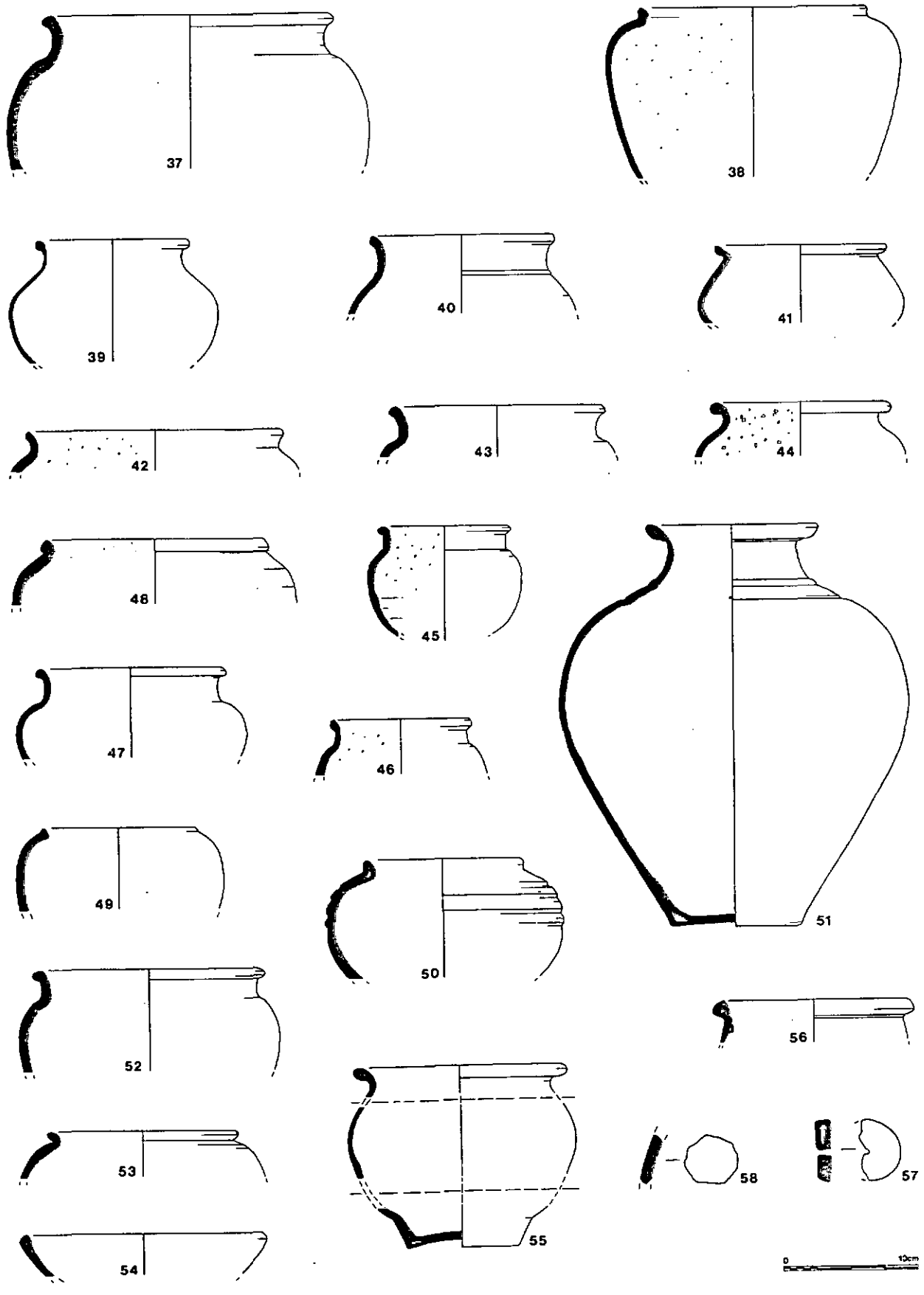
Wilson, D, 1993, Iron Age pottery, in T G Allen and M A Robinson, The prehistoric landscape and Iron Age enclosed settlement at Mingies Ditch, Hardwick-with-Yelford, Oxon, Oxford Archaeological Unit Thames Valley Landscapes: The Windrush Valley Vol 2, 70-75

Wilson, M G, 1984, The pottery, in S S Frere, Excavations at Dorchester on Thames, 1963, Archaeol J 141, 91-174, (155-172)

Young, C J, 1977, Oxfordshire Roman pottery, Brit Archaeol Rep (British Series) 43, Oxford


1
3
5
2
4
6
9
8
7
10
12
15
11
13
14
16
0
10cm


17
19
21
22
20
24
18
25
26
23
27
31
28
29
32
30
36
34
35
33
0
10cm


37
38
39
40
41
42
43
44
48
45
47
46
51
49
50
52
56
53
58
57
55
54
0
10cm

APPENDIX 3

The coins from Hatford, Oxfordshire.

By John A. Davies

Twelve coins and one token have been recovered from the small settlement site at Hatfield, Oxfordshire. The condition of the items is good and all are closely identifiable. Two coins are Celtic, ten are Roman and the single post-Roman item is a seventeenth century trade token.

The Celtic coins are both silver units and come from different tribal series. The earliest is an example of the so-called Dobunnic irregular coinage. This has been described as a 'Sub-Dobunnic' coinage by Van Arsdell and most recent examples have also been found on the eastern fringe of Dobunnic territory. The second example belongs to the Atrebates. It is an inscribed silver unit of Epaticcus. His coins are dated to the years preceding the Claudian invasion and are found in the northern part of Atrebatic territory. Hatford is situated on the boundary of these two tribal territories and it is interesting to see both tribal coinages represented at the site.

The Roman coins form a restricted chronological group. The earliest is an antoninianus of Claudius II (268-70). The normally prolific Constantinian folles of the years 330-40 are represented by a single example. The coin list does not begin significantly until after 340 and eight of the ten Roman coins were produced between this date and 364. The list then stops abruptly.

All of the Roman coins are bronze. Three are irregular

issues, including the two latest coins present, which are 'falling horseman' imitations, of reduced module. It has been possible to assign mints to all but one of the regular coins.

It is particularly interesting to associate the presence of coins with the Iron Age occupation. If occupation was then continuous into the Roman period, the use of coins was not continued, possibly suggesting that the early Celtic coinage had a function other than that of a medium for exchange. It is not surprising that such a site did not experience coin use for much of the Roman period. It was only in late Roman Britain that coins were used on a widespread basis for exchange, beyond the towns and market sites. The absence of coinage from earlier periods does not imply an absence of occupation. However, once coin use had begun, the sharp cut-off point for the coin list does suggest that occupation did not continue into the Valentinianic period.

There is just one post-Roman item. It is a well-preserved seventeenth century trade token of the nearby city of Oxford.

HATFORD, OXFORDSHIRE

Coin catalogue

By John A. Davies

A IRON AGE

1 SF ?

Dobunni - Irregular series AR unit 15 BC - 30 AD

O Celticised head right.

R Celticised horse left.

Class M

Diameter: 12mm Weight: 0.84g Van Arsdell 1175-1

2 SF 440

Atrebates - Epaticcus AR unit 35 - 43 AD

O Bust right; EPAT.

R Eagle facing.

Atrebatic L

Diameter: 13mm Weight: 1.27g Van Arsdell 580-3

B ROMAN

3 SF 97

Claudius II Antoninianus 268-70 AD

O [IMP C CLAV]DIVS AVG

R IOVI [VICTORI]

Mint - Rome RIC V: 53

4 SF 437

Constantine I Follis 332-3 AD

O VRBS ROMA

R Wolf and twins

Mint - Trier RIC VII: 542

5 SF 2

Constantine I Irregular follis 341-6 AD

O [CONSTANTI]NVS MAX AVG

R [GLORIA EXERCITVS], 2 standards

Diameter: 14mm

6 SF 438

Constans Follis 347-8 AD

O [CONSTAN]S PF AVG

R VICTORIAE DD [AVGG Q NN]

Mint - Trier RIC VIII: 206

7 SF 439

Constans Follis 347-8 AD

O CONSTANS [PF AVG]

R [VICTORIAE DD AVGG Q NN]

Mint - illegible

8 SF 69

Constans AE2 348-50 AD

O DN CONSTANS PF AVG

R [FE]L TEMP REPARATIO, Phoenix on rock

Mint - Trier RIC VIII: 228

9 SF 125

Magnentius AE2 350 AD

O [DN MAG]NENTIVS P[F AVG]

R [GLORI]A ROMANO[RVM]

Mint - Amiens RIC VIII: 2

10 SF 123

Constantius II AE2 353-5 AD

O DN CONSTANTIVS PF AVG

R FEL TEMP REPARATIO, falling horseman

Mint - Lyons RIC VIII: 189

11 SF 70

Constantius II Irregular issue 354-64 AD

O DN CONSTAN---

R [FEL TEMP REPA]RA[TIO], falling horseman

Diameter: 14mm

12 SF 4

Constantius II Irregular issue 354-64 AD

O DN CON---

R [FEL TEMP REPARATIO], falling horseman

Diameter: 11mm

C 17TH CENTURY TRADE TOKEN

13 SF 228

Farthing token of Oxford 1648-72

O SAMVELL.WALLIS = A roll of tobacco

R IN.OXON = S.A.W.

Williamson 182

APPENDIX 4

The Finds from OXHAMF 91

The small group contains a limited range of items of a domestic nature, consisting of personal ornament and possessions in the form of copper alloy brooches, a nail cleaner, a bone pin and a shale bracelet, domestic tools and fittings such as a weaving comb and a key, together with miscellaneous structural fittings, as for example, a joiner's dog and nails. The brooches date from the 1st century AD, two of them, SF 91 and SF 52, from the first half of the century and the weaving comb, SF 300, is a type known from the Iron Age and early Roman period in Britain. Some of the ironwork is datable to the Roman period, notably the small T-shaped lift key, SF 285, but various fragments, all apparently unstratified and possibly metal detected, are modern or undatable.

OXHAMF 91

Catalogue of Finds - Archive

BONE

SF 153 [spit 1]
Length 69mm
Pin. Crudely worked ?bird bone, with a slight ridge above the point, and flat upper end. Possibly a fastener rather than a hairpin.

SF 300 [0253] Weaving comb *
Length 53mm (incomplete); width 32mm
Comb, made from a long bone with seven teeth, of which six remain on the survivng fragment, arranged in a shallow curve. Incised decoration is visible on the curved outer surface of the bone in the form of slanting and straight parallel lines, with ring and dot motifs in the zone created above the fracture.

This type of weaving implement appeared first in Iron Age contexts in southern Britain and is found on numerous Roman sites (Wild 1970,156;MacGregor 1985, 189).

SF 145 [spit 1]
Length 48mm (incomplete); width 24mm
Archer's wrist guard. Fragment of long bone, the complete end squared, with a circular hole; lattice incised decoration on the outer face.

SF 3 US
Fragment- not worked.

COPPER ALLOY

SF 91 33150/95480 *
Length (max) 54mm
Brooch. Nauheim derivative, bow fractured and pin missing. First half of the 1st century AD.

SF 52 33180/95470 *
Length 38mm. One-piece brooch, Nauheim derivative; pin and spring only. First half of the 1st century AD.

SF 42 33160/95490
Length 39mm.
Brooch - spring with 16 turns and pin only. Probably 1st century AD.

SF 500 [0501]
Length (bent) 71mm. Pin from buckle or large penannular brooch, the terminal flattened and rolled where it was attached to the frame.

SF 189 spit 1 33200/95490
Length 41mm. ?Brooch.

SF 5 ?US [MD]
Length 39mm (incomplete)
Nail cleaner, with stylised leaf-shaped blade; upper part incomplete.

SF 236 US
Length 27mm. Lace chape. Med or post-medieval.

SF 7 US
Button. Modern

SF 201 [0153]
Button. Post-medieval/modern

SF 239 US
Fragment

SF 1 ?US
Length 14mm; width 5mm
Mount. Rectangular with central hole and two rivets, one remaining.

IRON (not x-rayed)

Objects

SF 285 33196.5/95493.4
Length 103mm. Key. Small T-shaped lift key with ring terminal. Roman

SF 257 [0229]
Length 44mm; Joiner's dog, arms incomplete. Used for joining two pieces of wood. Roman

SF 92 33150/95490
Length 87mm
Oval plate, fractured at ?both ends, possibly a fragment of blade.

SF 88 [A]
Length 78mm. Nail. L-shaped head. Roman

SF 235 US
Length 71mm. Nail. Type I (Manning 1985). Roman.

SF 435 [0206]
Length 30mm. Nail or staple with flat stem and triangular head.

SF 206 [0188]
Length 42mm. ?Nail shank

SF 334 [1037]
Length 32mm. ?Nail shank.

SF 135 33160/95470 Buckle
Height 39mm; internal h 28mm; width 20mm
B-shaped - Post-medieval

SF 8 ?US
Staple. Modern

SF 254 US
Staple.

Fragments

SF 361 [0028] D
Width 49mm
Fragment of plate or sheeting. Function uncertain.

SF 15 33170/95280
Length 58mm
Fragment of plate with indented edge - possibly from hinge.

SF 144 spit 1 33185/95470
38x23 mm. Rectangular fragment.

SF 38 33160/95480
Length 40mm. Triangular fragment, rectangular ?stem (incomplete) with curved ?blade also incomplete.
Unidentified.

SF 91 33160/95480
Unidentified

LEAD
SF 6 [MD]
Width 22mm. Rivet or plug (repair) for a ceramic vessel.

STONE

SF 48 33170/95470
Original diameter c. 80mm; surviving length 31mm
Shale bracelet - fragment, now with D-shaped section, but probably circular orginally.

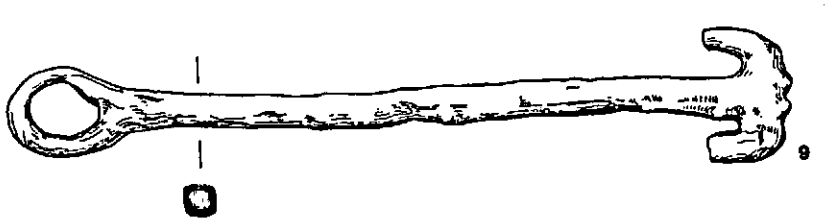
SF 358 [0076]
Rectangular fragment, broken. Could be a tessera, but I would hesitate to identify it as such unless there is other evidence of such a floor on the site.

References

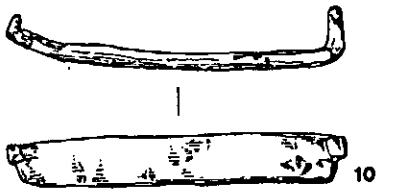
MacGregor, A, 1985 Bone, Antler, Ivory and Horn, Croom Helm

Wild, J P, 1970 Textile Manufacture in the Northern Roman Provinces, Cambridge University Press

Scale 1:1



9



10

Scale 1:1

APPENDIX 5

Manor House Farm
Hatford, Oxfordshire
Environmental Report

P. Wagner & M. Charles

U.S.A.S. Report 92:6

Environmental Report

Introduction

Forty-two samples were received from Tempus Reparatum. Environmental samples, numbers 1 4, and 42 were missing, but additional samples from Contexts 122, 165, 185, 188 and 222 were included.

The low numbers of molluscs and seeds recovered after processing of five trial samples indicated that the time required for identification and analysis would be moderate. Approximately half the bulk of all the remaining samples was then processed.

Sample processing

Approximately half the bulk of the samples was sieved through a mesh size of 20 mm to remove the large stones. Five litres of the sieved material were placed in a 10 litre bucket to soak overnight. The flot was then washed out through sieves of 1 mm and 0.500 mm mesh and oven dried at 50° C. The sieve contents were washed through sieves of 3 mm and 1 mm mesh and oven dried at 50° C.

The flots were sorted using a binocular low powered microscope for bones, seeds and molluscs. The residues were sorted by eye and rarely contained other than the occasional large body fragments of molluscs. Flotation is usually effective in separating organic fragments from unconsolidated types of matrix.

Results

The only substantial environmental evidence recovered was from molluscs, charred seed material was present at low levels in the majority of samples and only two small bones were mis-allocated during sorting, a small rodent tooth from Context 0206 and rodent long bone from Context 0026. The remainder of the sorted bones was passed to G. Mountenay for analysis.

The preservation of the charred seed material was typically poor, eroded with little or no surface surviving. Many of the cereal grains were glassy and brittle in texture which might suggest high temperature charring.

Some Contexts included egg cases of Lumbricidae (earth-worms) and the pupal cases of Diptera (flies) which were modern. These are evidence of a degree of bioturbation within the Context as is the presence of uncharred weeds seeds, presumably modern, which were frequent in the samples. If the site were exposed over a long period these could be wind bourne surface contaminants.

The majority of samples yielded low numbers of both individuals and species of snails, most of which are indicative of similar habitats. Molluscan analysis can only suggest aspects of the very localised environment, only from early Post-Glacial sites can wider climatic interpretation be attempted. To determine changes in local environment, assemblages are plotted as either absolute or relative frequencies from serial samples. The bulk sampling strategy employed here makes numerical analysis invalid.

Notes on molluscan species from Hatford

All samples, except 35 (Context 0216) and 35 (Context 0026), are numerically dominated by *Ceciloides acicula* Ferussac. This is a subterranean species that lives at depths of up to 2 m. It is likely that this species is of post Roman origin and it is common in areas have been recently cultivated but often absent from long standing grassland (Ellis, 1972). The burrowing habit precludes using *C. acicula* as an indicator of local environment.

The next three most numerous species are all indicative of open country and form the basic assemblage of most

of the samples. The most numerous, *Vallonia costata* (Müller) is a species of open habitat that rarely enters woods, usually avoids arable land and is rare or absent from lowland pasture.

Helicella itala Linnaeus, is the most characteristic open country species. Kerney 1968a noted *Helicella itala* becoming increasingly local because of the disappearance of short turfed grassland caused by the then scarcity of rabbits and by the decline of sheep grazing, it appears to avoid lowland pasture and arable land.

The characteristic habitat of *Pupilla muscorum* (Linnaeus) is earth bare of vegetation and it is generally absent from arable land.

Of particular interest are the good numbers of *Truncatellina cylindrica* (Ferussac) recovered from five samples, four of which are closely related spatially. In Britain *Truncatellina cylindrica* is a rare and very local xerophile species living in dry exposed places, hillsides, sandhills and maritime turf. Post-1950 records of living specimens are known from only three localities: West Yorkshire, Norfolk and Cambridgeshire (Kerney, 1976), although pre-1950 records are slightly more widespread. The present day disjunct distribution was reflected in the past; Evans, (1972) suggested that increased rainfall rather than thermal decline was the controlling factor for its current rarity.

Fossil records are distributed throughout Southern England. Common in the early second millenium from sites in Wiltshire though not from other Neolithic and Bronze age sites in Hampshire or the Isle of Wight where similar dry open grassland prevailed (Evans, 1972). There are no published records from Oxfordshire.

Pomatias elegans (Müller) is the most characteristic calcophile. By comparing modern and fossil distribution of *Pomatias elegans*, Kerney (1968b) demonstrated that there has been a southward and westward contraction of its range during the Holocene. In general, the species favours shaded and moist habitats with broken ground and loose soil into which it can burrow. This species has been found in concentrations in the soil horizons of ditch deposits the *Cyclostoma elegans* zone of early excavators e.g Fox-Lane, 1869.

Vertigo pygmaea (Draparnaud) is usually only found in small numbers and is essentially a species of open country, it may be more prolific in stable undisturbed environments.

Trichia striolata (Pfeiffer) is a synanthropic species, today it is found in arable land gardens and waste places generally. Early in the Holocene it occurred in woodland in abundance. It is extremely rare in archaeological deposits of the Neolithic and Bronze ages. The establishment of the species as a synanathrope is of Roman or medieval origin (Evans, 1972).

Very small numbers of the shade loving species *Carychium tridentatum* (Risso) and *Discus rotundatus* (Müller) occur in a few Contexts.

The species *Punctum pygmaeum* (Draparnaud), *Euconulus fulvus* (Müller), *Nesovitrea hammonis* (Ström) and *Vitrina pellucida* (Müller) are normally shade loving species that occur in small numbers but as a group are particularly tolerant of a wide range of habitats, especially the more open ones.

A few individuals of *Succinea putris* (Linnaeus) were recovered from several Contexts. This species is restricted to damp habitats – water meadows, marshes reed and sedge beds.

A single valve of a pea mussel *Pisidium sp.* was recovered from Context 0026 (Sample 34). Although not assignable to species, these small bivlaves are associated with rather damp conditions often living in ponds, lakes and canals.The inclusion of isolated individuals of these damp loving species could be incidental transport by vertebrates or imports on waterside vegetation to the site.

Site interpretation

Botanical material

There was too little material recovered, despite the sample size, to warrant detailed discussion of the samples. A full list is given in Appendix 1.

The consistent presence of cultivated cereals in these samples implied the repeated disposal of burnt crop remains, the composition of the material would agree with the disposal of crop processing residues, i.e. there was a high proportion of chaff remains, rather than pure processed grain. The weed seeds present were not idenitifed to species level but in size were similar to those of the crop seeds which would be expected in the later stages of crop processing.

Molluscan material

To describe each sample assemblage individually would make repetitive reading and not be very informative. However when assemblages are plotted onto the site plan several interesting patterns emerge. These are discussed below. The full assemblage lists are given in Appendix 2.

Short turfed grassland assemblages characterised by *Vallonia costata, Helix itala* and *Pupilla muscorum* predominate in certain areas. In the North west, from samples of Contexts 174, and 0032, the pit complex with Contexts 0005, 0182 and the ditch to the north of the round-house (Sample 26 : No Context number.). The pit group 0119, 0123 , 0122 and 0021 are low in numbers of individuals and with the post hole 0121 are characterised by numerical domination by *Helicella itala* rather than the more prolific *Vallonia costata.*

The pits 0020, 0185 and 0205 also contain assemblages of short turfed grassland species but differ from adjacent Contexts. Pit 0020 contains good numbers of the three dominant species but no others, whereas the spatially close Context 0110 is similar but is one of the few samples to contain the catholic genera *Cochlicopa* spp., as does the adjacent 109 gully. The more mixed assemblages from this gully may well reflect the damper conditions that prevail in such a feature or reflect a temporal and environmental discretion. The Pit 0205 stands out from the surrounding Contexts 0204, 0206 and 0207. The assemblage from 0204 is very small but contains *Nesovitrea hammonis* as do 0206 and 0207, the latter two Contexts are more catholic in their assemblages and may indicate slightly more humid conditions with longer vegetation than the later 0205. Pit 0185 also seems distinct from the more varied but small assemblages from 0188 and 0191.

The number of individuals from the pits 0213 and 0217 associated with circular eastern feature are too small to comment on. This could be a reflection of rapid infilling of the pit or that conditions suitable for preservation in the pit i.e. a base rich matrix were absent. It is noteworthy that the pit 0213 contained the most charred botanical material.

The more interesting assemblages occur associated with the linear ditch structure. Both Contexts 0026 and the upper 0216 context, together with 0222 contain individuals of *Truncatellina cylindrica.* These Contexts are spatially related. The only other Context which contains this rare species is the base of gully 0109, where a single individual was found.

The lower 0216 context is low in number of individuals and contains no *Truncatellina cylindrica.* Assemblages from post holes often exhibit taphonomic problems, because of the heterogeneous nature of the fill. The original post-hole pit being filled with part of the excavated material, the post and any packing, when the post decays the infill is of a later date and may provide a very local habitat..

Conclusion

In the absence of fuller stratigraphic or phasing information it is not possible to comment fully on the site. Despite the low rate of preserved environmental evidence, the information recovered could be of interest. It is possible that there are two different environments being sampled, an earlier period of longer, more lush vegetation and a later more closely grazed open grassland. It is possible that these are just very localised habitat variations but the restricted number of contexts with *T. cylindrica* which is not inherently infreqent may contra-indicate this possibility. The dearth of woodland species would indicate that clearance was complete and the ditches were too dry for colonisation of shade or damp preferring species.

The evidence from the charred botanical material and the molluscs is not incompatible. The more frequent botanical material is from pits and most is from an "indoor" context.

The recovery of the rare *Truncatellina cylindrica* from a site of such late date is important. With the consent of Tempus Reparatum, this find should be communicated to the Institute of Terrestrial Ecology by the analyst.

References

Ellis, A.E. 1962 *British freshwater bivalves.* Synopses of the British fauna No **13** London: Linnean Society.

Evans, J.G. 1972 *Land snails in Archaeology: with special reference to the British Isles.* London: Seminar Press.

Kerney, M.P. 1968a Field Meeting to Leicestershire, 27th April 1968. *Conchologists Newsletter* **27,** 72–73.

Kerney, M.P. 1968b Britains fauna of land Mollusca and its relation to the Post-Glacial thermal optimum. *Symposium of the Zoological Society of London* **22,** 273–291.

Kerney, M.P. 1976 *Atlas of the Non-Marine Mollusca of the British Isles.* Cambridge: Conchological Society of Great Britain & Ireland : National Environment Research Council.

Kerney, M.P. & Cameron, R.A.D. 1979 *A Field Guide to the Land Snails of Britain and North-west Europe.* London: Collins.

Lane-Fox, A.H. 1869 Further remarks on the hill forts of Sussex: being an account of excavations in the forts at Cissbury and Highdown. *Archaeologia* **42,** 53 – 76.

Appendix 1 – Botanical Remains

Sample Number	*2*	*3*	*5*	*6*	*7*	*8*
Context Number	*0071*	*0110*	*0113*	*0021*	*0119*	*0123*
Feature	*linear*	*pit*	*pit*	*pit*	*pit*	
Modern weed seed	2	7	11	6	8	25
Cereals	–	–	–	–	–	–
Hordeum (Barley)	–	–	–	–	–	–
Hulled	–	–	1	–	4	–
Naked	–	–	–	–	–	–
Triticum spelta (Spelt)–	–	–	–	–	–	–
grain	–	–	–	–	1	–
glume base	–	–	–	–	2	–
T.dicoccum/spelta	–	–	–	–	–	–
grain	–	–	–	4	–	–
glume base	–	–	3	9	1	–
Avena sp. (Oat)	–	–	–	–	–	–
Cereal spp. indet.	–	–	4	–	6	3
Grasses	–	–	–	–	–	–
Lolium/Festuca	–	–	–	–	1	1
Bromus sp.	–	–	–	–	–	–
Weeds	–	–	–	–	–	–
Rumex sp. (Dock)	–	–	–	–	–	–
Boraginaceae spp.	–	–	–	–	–	–
Polygonum spp.	–	–	–	–	–	–
Plantago spp.	–	–	–	–	–	–

Sample Number	*9*	*10*	*11*	*13*	*14*	*15*
Context Number	*0121*	*0032*	*0182*	*0205*	*0206*	*0207*
Feature			*P/H*	*irregular*	*irregular*	
Modern weed seed	12	15	30	4	–	1
Cereals	–	–	–	–	–	–
Hordeum (Barley)	–	–	–	–	–	–
Hulled	–	–	–	3	–	2
Naked	–	–	–	–	–	–
Triticum spelta (Spelt)–	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	–	–	–	1	–
T.dicoccum/spelta	–	–	–	–	–	–
grain	–	–	–	–	1	–
glume base	–	–	–	–	3	2
Avena sp. (Oat)	–	–	–	–	2	–
Cereal spp. indet.	–	–	2	–	–	2
Grasses	–	–	–	–	–	–
Lolium/Festuca	–	–	–	1	–	3
Bromus sp.	–	–	–	–	–	–
Weeds	1	–	1	–	–	–
	Centaurea		*Carex*			
Rumex sp. (Dock)	–	–	–	–	–	–
Boraginaceae spp.	–	–	–	–	–	–
Polygonum spp.	–	–	–	–	–	–
Plantago spp.	–	–	–	–	–	–

Sample Number	*16*	*17*	*18*	*19*	*20*	*21*
Context Number	*0204*	*0088*	*0027*	*0174*	*0094*	*0172*
Feature	*irregular*	*P/H*	*?*	*linear*	*linear*	*linear*
Modern weed seed	7	9		23	4	20
Cereals	–	–	–	–	–	–
Hordeum (Barley)	–	–	–	–	–	–
Hulled	1	1	–	–	–	–
Naked	–	–	–	–	–	–
Triticum spelta (Spelt)–	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	–	–	–	–	–
T.dicoccum/spelta	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	–	–	–	–	–
Avena sp. (Oat)	–	–	–	–	–	–
Cereal spp. indet.	1	–	–	–	–	–
Grasses	–	–	–	–	–	–
Lolium/Festuca	–	–	–	–	1	–
Bromus sp.	–	–	–	–	–	–
Weeds	–	–	–	–	–	–
Rumex sp. (Dock)	–	–	–	–	–	–
Boraginaceae spp.	–	–	–	–	–	–
Polygonum spp.	–	–	–	–	–	–
Plantago spp.	–	–	–	–	–	–

Sample Number	*22*	*23*	*24*	*25*	*26*	*27*
Context Number	*0096*	*0208*	*0098*	*0213*	*?*	*0130*
Feature		*linear*	*linear*	*pit*	*ditch*	*pit*
Modern weed seed	6	8	–	–	–	2
Cereals	–	–	–	–	–	–
Hordeum (Barley)	–	–	–	–	–	–
Hulled	–	1	–	6	–	1
Naked	–	–	–	–	–	–
Triticum spelta (Spelt)–	–	–	–	–	–	–
grain	–	–	–	1	–	–
glume base	–	–	–	–	–	–
T.dicoccum/spelta	–	–	2	2	–	–
grain	–	–	–	–	–	–
glume base	–	–	–	8	2	1
Avena sp. (Oat)	–	–	–	–	–	–
Cereal spp. indet.	–	1	–	11	4	3
Grasses	–	–	–	–	–	–
Lolium/Festuca	–	–	–	–	–	1
Bromus sp.	–	–	–	–	–	–
Weeds	–	–	–	–	–	–
Rumex sp. (Dock)	–	–	–	2	–	1
Boraginaceae spp.	–	–	–	–	–	2
Polygonum spp.	–	–	–	–	–	–
Plantago spp.	–	–	–	–	–	–

Sample Number	*28*	*29*	*30*	*31*	*32*	*33*
Context Number	*0020*	*0020*	*0109*	*0109*	*0141*	*0150*
Feature	*pit*	*pit*	*gully*		*pit*	*n-s drov*
Modern weed seed	6	8	4	3	4	–
–						
Cereals	–	–	–	–	–	–
Hordeum (Barley)	–	–	–	–	–	–
Hulled	1	–	–	–	2	–
Naked	–	–	–	–	–	–
Triticum spelta (Spelt)–	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	4	–	–	–	–
T.dicoccum/spelta	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	–	–	–	2	–
Avena sp. (Oat)	–	–	–	–	–	–
Cereal spp. indet.	1	3	–	–	4	–
Grasses	–	–	–	–	–	–
Lolium/Festuca)	–	1	–	–	3	–
Bromus sp.	1	–	–	–	–	–
Weeds	–	–	–	–	–	–
Rumex sp. (Dock)	–	–	–	–	–	–
Boraginaceae spp.	–	–	–	–	–	–
Polygonum spp.	–	–	–	–	–	–
Plantago spp.	1	–	–	–	–	–

Sample Number	*34*	*35*	*36*	*37*	*38*	*39*
Context Number	*0026*	*0216*	*0216*	*0026*	*0208*	*0007*
Feature	*drove*	*upper P/H*	*lower P/H*	*v-slot*	*pit*	*trench*
Modern weed seed	–	1	1	–	–	5
Cereals	–	–	–	–	–	–
Hordeum (Barley)	–	–	–	–	–	–
Hulled	1	–	–	–	1	2
Naked	–	–	–	–	–	–
Triticum spelta (Spelt)–	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	–	–	–	–	–
T.dicoccum/spelta	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	–	2	–	4	3
Avena sp. (Oat)	–	–	–	–	–	–
Cereal spp. indet.	–	–	–	–	2	5
Grasses	–	–	–	–	–	–
Lolium/Festuca	–	–	–	–	–	7
Bromus sp.	–	1	1	–	–	–
Weeds	–	–	–	–	–	–
Rumex sp. (Dock)	–	–	–	–	1	–
Boraginaceae spp.	–	–	–	–	–	–
Polygonum spp.	1	–	–	–	2	–
Plantago spp.	–	–	–	–	–	–

Sample Number	*40*	*41*	*43*			
Context Number	*0217*	*0217*	*0241*	*0222*	*0165*	*0185*
Feature	*pit*	*pit*	*pit*	*ditch*	*pit*	*pit*
Modern weed seed	4	5	2	3	9	–
Cereals	–	–	–	–	–	–
Hordeum (Barley)	–	–	–	–	–	–
Hulled	1	1	–	1	–	–
Naked	1	–	–	–	–	–
Triticum spelta (Spelt)–	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	–	–	–	–	–
T.dicoccum/spelta	–	–	–	–	–	–
grain	–	–	–	–	–	–
glume base	–	3	–	–	–	–
Avena sp. (Oat)	–	1	–	–	–	–
Cereal spp. indet.	–	–	–	1	1	3
Grasses	–	–	–	–	–	–
Lolium/Festuca	–	1	–	–	–	4
Bromus sp.	–	–	–	1	–	–
Weeds	–	–	–	–	–	–
Rumex sp. (Dock)	–	–	–	–	–	–
Boraginaceae spp.	–	–	–	–	–	–
Polygonum spp.	–	–	–	–	–	–
Plantago spp.	–	–	–	–	–	–

Appendix 2 – Invertebrate Remains

Sample Number	*2*	*3*	*5*	*6*	*7*	*8*
Context Number	*0071*	*0110*	*0113*	*0021*	*0119*	*0123*
Feature	*linear*	*pit*	*pit*	*pit*	*pit*	
Puparia indet.	–	15	2	–	2	–
Lumbricidae(egg cases)	–	–	–	–	–	–
Molluscs	–	–	–	–	–	–
POMATIIDAE						
Pomatia elegans (Müller)	–	–	–	–	–	–
ELLOBIIDAE						
Carychium tridentatum (Risso)	–	–	–	5	–	–
Carychium spp.	–	–	–	–	–	–
SUCCINEIDAE						
Succinea putris (Linnaeus)	–	–	–	–	–	–
COCHLICOPIDAE						
Cochlicopa spp	–	–	–	2	–	–
VERTIGINIDAE						
Truncatellina cylindrica (Férussac)	–	–	–	–		–
Vertigo pygmaea (Draparnaud)	–	–	–	1	–	–
PUPILLIDAE						
Pupilla muscorum (Linnaeus)	–	9	5	–	–	–
VALLONIDAE						
Vallonia costata (Müller)	21	6	–	6	4	3
Vallonia spp	–	–	–	–	–	–
Clausiliidae gen. et spp. indet	1	–	–	–	–	–
ENDONDONTIDAE						
Punctum pygmeum (Draparnaud)	–	–	–	–	1	–
Discus rotundatus (Müller)	–	–	–	–	–	–
ZONITIDAE						
Nesovitrea hammonis (Ström)	–	–	–	–	–	–
Aegonipella nitidula (Draparnaud)	–	–	–	–	–	–
VITRINIDAE						
Vitrina pellucida (Müller)	–	–	–	–	–	–
EUCONULIDAE						
Euconulus fulvus (Müller)	–	–	–	–	–	–
HELICIDAE						
Cepaea sp.	–	–	–	–	–	–
Helicella itala (Linnaeus)	10	4	1	–	5	4
Trichia striolata (Pfeiffer)	–	–	–	–	1	–
Trichia hispida (Linnaeus)	–	3–	–	5	5	1
SPHAERIIDAE						
Pisidium sp						–
FERUSSACIIDAE						
Ceciloides acicula (Müller)	140	227	389	127	180	87
Total	184	244	396	145	190	94
Total excluding *C. acicula*	44	17	7	18	10	7

Sample Number	*9*	*10*	*11*	*13*	*14*	*15*
Context Number	*0121*	*0032*	*0182*	*0205*	*0206*	*0207*
Feature	*P/H*	*irregular*	*irregular*			
Puparia indet.	14	–	–	–	–	–
Lumbricidae (egg cases)	–	–	–	–	–	–
Molluscs	–	–	–	–	–	–
POMATIIDAE						
Pomatia elegans (Müller)	–	–	–	–	–	–
ELLOBIIDAE						
Carychium tridentatum (Risso)	–	–	–	–	3	1
Carychium spp.	–	–	–	–	–	–
SUCCINEIDAE						
Succinea putris (Linnaeus)	–	–	–	–	1	–
COCHLICOPIDAE						
Cochlicopa spp	–	–	–	–	2	–
VERTIGINIDAE						
Truncatellina cylindrica (Férussac)	–	–	–	–	–	
Vertigo pygmaea (Draparnaud)	1	–	–	–	2	1
PUPILLIDAE						
Pupilla muscorum (Linnaeus)	2	9	–	3	7	1
VALLONIDAE						
Vallonia costata (Müller)	4	13	–	1	6	2
Vallonia spp	–	–	–	–	–	–
Clausiliidae gen. et spp. indet	–	1	–	–	–	–
ENDONDONTIDAE						
Punctum pygmeum (Draparnaud)	–	–	2	–	–	–
Discus rotundatus (Müller)	–	1	–	–	1	–
ZONITIDAE						
Nesovitrea hammonis (Ström)	–	–	–	2	2	–
Aegonipella nitidula (Draparnaud)	–	1	–	–	–	–
VITRINIDAE						
Vitrina pellucida (Müller)	–	–	–	–	–	–
EUCONULIDAE						
Euconulus fulvus (Müller)	–	–	–	–	–	–
HELICIDAE						
Cepaea sp.	–	–	–	–	–	2
Helicella itala (Linnaeus)	15	–	17	4	4	–
Trichia striolata (Pfeiffer)	–	–	–	–	–	–
Trichia hispida (Linnaeus)	1	10	–	–	1	–
SPHAERIIDAE						
Pisidium sp	–	–	–	–	–	–
FERUSSACIIDAE						
Ceciloides acicula (Müller)	257	465	349	86	244	73
Total	280	499	367	94	273	82
Total excluding *C. acicula*	23	34	18	8	29	9

Sample Number	*16*	*17*	*18*	*19*	*20*	*21*
Context Number	*0204*	*0088*	*0027*	*0174*	*0094*	*0172*
Feature		*irregular*	*P/H?*	*linear*	*linear*	*linear*
Puparia indet.	–	20	–	2	–	–
Lumbricidae (egg cases)	–	–	–	2	–	–
Molluscs	–	–	–	–	–	–
POMATIIDAE						
Pomatia elegans (Müller)	–	–	–	1	–	–
ELLOBIIDAE						
Carychium tridentatum (Risso)	–	–	–	–	–	–
Carychium spp.	–	–	–	–	–	–
SUCCINEIDAE						
Succinea putris (Linnaeus)	–	–	–	–	–	–
COCHLICOPIDAE						
Cochlicopa spp	–	–	–	–	–	2
VERTIGINIDAE						
Truncatellina cylindrica (Férussac)	–	–	–	–	–	–
Vertigo pygmaea (Draparnaud)	–	–	1	–	–	–
PUPILLIDAE						
Pupilla muscorum (Linnaeus)	1	3	3	19	7	–
VALLONIDAE						
Vallonia costata (Müller)	2	4	1	11	14	–
Vallonia spp	–	–	–	–	–	–
Clausiliidae gen. et spp. indet	–	–	–	–	–	–
ENDONDONTIDAE						
Punctum pygmeum (Draparnaud)	–	–	–	–	–	–
Discus rotundatus (Müller)	–	–	–	–	–	–
ZONITIDAE						
Nesovitrea hammonis (Ström)	2	–	–	–	–	–
Aegonipella nitidula (Draparnaud)	1	–	–	–	–	–
VITRINIDAE						
Vitrina pellucida (Müller)	–	–	–	–	–	–
EUCONULIDAE						
Euconulus fulvus (Müller)	–	–	–	–	–	–
HELICIDAE						
Cepaea sp.	–	–	–	–	–	–
Helicella itala (Linnaeus)	3	–	17	7	9	–
Trichia striolata (Pfeiffer)	–	1	–	–	–	–
Trichia hispida (Linnaeus)	–	9	1	–	–	–
SPHAERIIDAE						
Pisidium sp	–	–	–	–	–	–
FERUSSACIIDAE						
Ceciloides acicula (Müller)	119	224	83	535	203	94
Total	127	242	106	572	233	96
Total excluding *C. acicula*	8	18	23	38	30	2

Sample Number	*22*	*23*	*24*	*25*	*26*	*27*
Context Number	*0096*	*0208*	*0098*	*0213*	*?*	*0130*
Feature	*linear*	*linear*	*pit*	*ditch*	*pit*	
Puparia indet.	–	1	–	–	–	–
Lumbricidae (egg cases)	–	–	–	1	–	–
Molluscs	–	–	–	–	–	–
POMATIIDAE						
Pomatia elegans (Müller)	–	–	–	–	–	–
ELLOBIIDAE						
Carychium tridentatum (Risso)	–	–	–	1	–	1
Carychium spp.	–	–	–	–	–	–
SUCCINEIDAE						
Succinea putris (Linnaeus)	–	–	–	–	–	–
COCHLICOPIDAE						
Cochlicopa spp	–	–	–	–	–	–
VERTIGINIDAE						
Truncatellina cylindrica (Férussac)	–	–	–	–	–	–
Vertigo pygmaea (Draparnaud)	–	–	2	–	–	–
PUPILLIDAE						
Pupilla muscorum (Linnaeus)	2	4	3	–	2	–
VALLONIDAE						
Vallonia costata (Müller)	14	6	2	2	4	1
Vallonia spp	–	–	–	–	–	–
Clausiliidae gen. et spp. indet	–	–	–	–	–	–
ENDONDONTIDAE						
Punctum pygmeum (Draparnaud)	–	–	–	–	–	–
Discus rotundatus (Müller)	–	–	–	–	–	–
ZONITIDAE						
Nesovitrea hammonis (Ström)	–	–	–	–	–	–
Aegonipella nitidula (Draparnaud)	–	–	–	–	–	–
VITRINIDAE						
Vitrina pellucida (Müller)	–	–	–	1	–	–
EUCONULIDAE						
Euconulus fulvus (Müller)	–	–	–	–	–	–
HELICIDAE						
Cepaea sp.	–	–	–	–	–	–
Helicella itala (Linnaeus)	10	1	3	–	14	2
Trichia striolata (Pfeiffer)	–	1	–	–	–	–
Trichia hispida (Linnaeus)	–	11	–	–	–	–
SPHAERIIDAE						
Pisidium sp	–	–	–	–	–	–
FERUSSACIIDAE						
Ceciloides acicula (Müller)	503	139	149	261	144	88
Total	531	162	159	265	164	92
Total excluding *C. acicula*	28	23	10	4	20	4

Sample Number	*28*	*29*	*30*	*31*	*32*	*33*
Context Number	*0020*	*0020*	*0109*	*0109*	*0141*	*0150*
Feature	*pit*	*pit*	*gully*		*pit*	*n-s drov*
Puparia indet.	–	–	–	–	2	–
Lumbricidae (egg cases)	–	–	–	–	–	–
Molluscs	–	–	–	–	–	–
POMATIIDAE						
Pomatia elegans (Müller)	–	–	–	–	–	–
ELLOBIIDAE						
Carychium tridentatum (Risso)	–	–	–	–	–	–
Carychium spp.	–	–	–	–	–	–
SUCCINEIDAE						
Succinea putris (Linnaeus)	–	–	–	–	–	–
COCHLICOPIDAE						
Cochlicopa spp	–	–	3	–	1	–
VERTIGINIDAE						
Truncatellina cylindrica (Férussac)	–	–	1	–	–	–
Vertigo pygmaea (Draparnaud)	–	–	1	–	–	–
PUPILLIDAE						
Pupilla muscorum (Linnaeus)	9	12	–	–	1	–
VALLONIDAE						
Vallonia costata (Müller)	28	22	4	2	9	1
Vallonia spp	–	–	–	–	–	–
Clausiliidae gen. et spp. indet	–	–	–	–	–	–
ENDONDONTIDAE						
Punctum pygmeum (Draparnaud)	–	–	–	–	–	–
Discus rotundatus (Müller)	–	–	–	2	–	–
ZONITIDAE						
Nesovitrea hammonis (Ström)	–	–	–	–	–	–
Aegonipella nitidula (Draparnaud)	–	1	–	–	–	–
VITRINIDAE						
Vitrina pellucida (Müller)	–	–	–	–	–	–
EUCONULIDAE						
Euconulus fulvus (Müller)	–	–	–	–	–	–
HELICIDAE						
Cepaea sp.	–	–	–	1	–	–
Helicella itala (Linnaeus)	9	9	–	2	7	–
Trichia striolata (Pfeiffer)	–	–	–	–	–	–
Trichia hispida (Linnaeus)	1	–	–	–	2	–
SPHAERIIDAE						
Pisidium sp	–	–	–	–	–	–
FERUSSACIIDAE						
Ceciloides acicula (Müller)	190	120	31	34	52	105
Total	237	163	40	42	72	106
Total excluding *C. acicula*	47	43	9	8	20	1

Sample Number	*34*	*35*	*36*	*37*	*38*	*39*
Context Number	*0026*	*0216*	*0216*	*0026*	*0208*	*0007*
		upper	*lower*			
Feature	*drove*	*P/H*	*P/H*	*v-slot*	*pit*	*trench*
Puparia indet.	–	–	1	–	1	1
Lumbricidae (egg cases)	–	–	–	–	–	–
Molluscs	–	–	–	–	–	–
POMATIIDAE						
Pomatia elegans (Müller)	2	–	–	1	–	–
ELLOBIIDAE						
Carychium tridentatum (Risso)	2	2	1	2	–	–
Carychium spp.	–	–	–	–	–	–
SUCCINEIDAE						
Succinea putris (Linnaeus)	–	–	1	–	–	–
COCHLICOPIDAE						
Cochlicopa spp	–	–	–	2	–	–
VERTIGINIDAE						
Truncatellina cylindrica (Férussac)	14	2	–	1	–	–
Vertigo pygmaea (Draparnaud)	2	2	–	–	–	–
PUPILLIDAE						
Pupilla muscorum (Linnaeus)	1	10	–	1	1	1
VALLONIDAE						
Vallonia costata (Müller)	45	10	3	12	14	3
Vallonia spp	–	–	–	–	–	–
Clausiliidae gen. et spp. indet	–	–	–	–	–	
–ENDONDONTIDAE						
Punctum pygmeum (Draparnaud)	–	–	–	–	–	1
Discus rotundatus (Müller)	–	–	–	–	–	–
ZONITIDAE						
Nesovitrea hammonis (Ström)	–	–	–	–	–	–
Aegonipella nitidula (Draparnaud)	–	–	–	–	–	–
VITRINIDAE						
Vitrina pellucida (Müller)	18	12	–	9	2	–
EUCONULIDAE						
Euconulus fulvus (Müller)	–	–	–	–	2	–
HELICIDAE						
Cepaea sp.	6	1	–	–	2	–
Helicella itala (Linnaeus)	14	3	–	4	7	–
Trichia striolata (Pfeiffer)	–	2	–	–	–	–
Trichia hispida (Linnaeus)	16	9	2	1	1	–
SPHAERIIDAE						
Pisidium sp	1	–	–	–	–	–
FERUSSACIIDAE						
Ceciloides acicula (Müller)	100	27	8	113	77	48
Total	219	80	15	146	104	53
Total excluding	–	–	–	–	–	–
C. acicula	121	53	7	33	27	5

Sample Number	**40**	**41**	**43**			
Context Number	**0217**	**0217**	**0241**	**0222**	**0165**	**0185**
Feature	**pit**	**pit**	**pit**	**ditch**	**pit**	**pit**
Puparia indet.	1	–	–	–	30	1
Lumbricidae (egg cases)	–	–	–	–	–	–
Molluscs	–	–	–	–	–	–
POMATIIDAE						
Pomatia elegans (Müller)	–	–	–	–	–	–
ELLOBIIDAE						
Carychium tridentatum (Risso)	–	–	–	–	–	–
Carychium spp.	–	–	–	–	–	–
SUCCINEIDAE						
Succinea putris (Linnaeus)	–	–	–	–	–	–
COCHLICOPIDAE						
Cochlicopa spp	–	–	–	–	3	–
VERTIGINIDAE						
Truncatellina cylindrica (Férussac)	–	–	7	–	–	–
Vertigo pygmaea (Draparnaud)	–	–	–	–	–	–
PUPILLIDAE						
Pupilla muscorum (Linnaeus)	1	–	–	2	10	–
VALLONIDAE						
Vallonia costata (Müller)	2	4	3	8	12	9
Vallonia spp	–	–	–	6	–	–
Clausiliidae gen. et spp. indet	–	–	–	–	–	–
ENDONDONTIDAE						
Punctum pygmeum (Draparnaud)	–	–	–	–	–	–
Discus rotundatus (Müller)	–	–	–	–	–	–
ZONITIDAE						
Nesovitrea hammonis (Ström)	–	–	–	–	–	–
Aegonipella nitidula (Draparnaud)	–	–	–	–	–	–
VITRINIDAE						
Vitrina pellucida (Müller)	–	–	–	2	–	–
EUCONULIDAE						
Euconulus fulvus (Müller)	–	–	–	–	–	–
HELICIDAE						
Cepaea sp.	–	–	–	3	1	–
Helicella itala (Linnaeus)	1	–	–	12	28	5
Trichia striolata (Pfeiffer)	–	–	–	–	–	–
Trichia hispida (Linnaeus)	1	–	–	–	1	–
SPHAERIIDAE						
Pisidium sp	–	–	–	–	–	–
FERUSSACIIDAE						
Ceciloides acicula (Müller)	32	79	44	91	124	62
Total	37	83	47	131	179	76
Total excluding *C. acicula*	5	4	3	40	55	14

Sample Number		
Context Number	*0188*	*0122*
Feature	*pit*	
Puparia indet.	–	–
Lumbricidae (egg cases)	–	–
Molluscs	–	–
POMATIIDAE		
Pomatia elegans (Müller)	2	–
ELLOBIIDAE		
Carychium tridentatum (Risso)	–	2
Carychium spp.	–	–
SUCCINEIDAE		
Succinea putris (Linnaeus)	1	–
COCHLICOPIDAE		
Cochlicopa spp	1	–
VERTIGINIDAE		
Truncatellina cylindrica (Férussac)	–	–
Vertigo pygmaea (Draparnaud)	–	–
PUPILLIDAE		
Pupilla muscorum (Linnaeus)	–	–
VALLONIDAE		
Vallonia costata (Müller)	1	1
Vallonia spp		–
Clausiliidae gen. et spp. indet	–	–
ENDONDONTIDAE		
Punctum pygmeum (Draparnaud)		–
Discus rotundatus (Müller)	–	–
ZONITIDAE		
Nesovitrea hammonis (Ström)	–	–
Aegonipella nitidula (Draparnaud)	–	–
VITRINIDAE		
Vitrina pellucida (Müller)	–	–
EUCONULIDAE		
Euconulus fulvus (Müller)	–	–
HELICIDAE		
Cepaea sp.	–	–
Helicella itala (Linnaeus)	1	–
Trichia striolata (Pfeiffer)	–	–
Trichia hispida (Linnaeus)	1	–
SPHAERIIDAE		
Pisidium sp	–	–
FERUSSACIIDAE		
Ceciloides acicula (Müller)	41	49
Total	49	52
Total excluding *C. acicula*	8	3

APPENDIX 6

MANORHOUSE FARM, HATFORD, OXFORDSHIRE.

ANIMAL BONE REPORT.

by

Graeham Mounteney

FOR TEMPUS REPERATUM
(ARCHAEOLOGICAL AND HISTORICAL ASSOCIATES)

March, 1992

Introduction.

The animal bones recovered from Manorhouse Farm, Hatford, consisted of an assemblage of 1680 fragmentary hand recovered specimens, of which 491 specimens were of potentially significant analytical value. The bones were derived from a range of archaeological contexts, largely within one of two ceramically defined site phases: either late Iron Age, or Romano-British (mainly 1st century), although a small quantity (85 specimens including 36 significant), were subsequently classified as unstratified.

The bulk of the bone was recovered from a total of 120 definable contexts (or internal strata); pit, and to a lesser extent ditch contexts, with a sizeable proportion from cobble and stone surfaces associated with floor or wall foundations, mainly of late Iron Age date, together with occasional scoops, natural features and one posthole (table 1). Very few contexts produced more than a handful of significant bones; 13 contexts exceeded 10 significant specimens, five over 20 significant specimens.

Recovery by hand largely involved use of pick and shovel, supplemented by hand trowel, presumably in smaller contexts, or areas of greater structural significance. Forty five bulk soil samples were also extracted from a variety of contexts; approximately 50% of all samples were seived through a 20mm mesh, and 5 litres of each were subsequently soaked and passed through 3mm and 1mm seives (see Environmental Report). The quantity of bone extracted is documented in table 2. However, flotation samples cannot constitute an adequate control with regard to hand recovery of small animal bones (merely serving to underline the relative scarcity of bone), as a consequence of the small scale of sampling; although no bone was recovered from pre flotation 20mm seive samples, inevitably, loss on recovery of small animal bones and smaller specimens of medium sized species, in particular, must have occurred, to an unknown extent.

Analytical methods.

Data was recorded numerically, initially as a paper record, with reference to the writer's own comparitive collection, and subsequently transferred to PC and a commercial relational database, customised by the author, for archaeozoological analysis. Contextual assemblages were examined individually, to maintain local integrity, though two fundamental databases were created, consisting of analytically significant (individual records), and less significant specimens (combined individual and grouped records). Significant specimens are here defined as all specimens exhibiting epiphyseal sections, mandibles with lower cheektooth alveoli/diastema, detached lower cheekteeth, and selected skull specimens (occipital condyles and maxillae with at least 3 teeth); these were identified as far as possible to species and element type. Metrical values (after Von Den Driesch, 1976) and other data concerning age, sex, pathology and anatomical association were collected; in addition, data concerning fragment typology, in relation to proportional representation of skeletal part, gnawing, burning, mineralisation, abbrasion, fracture type and butchery were also recorded.

Less significant fragments were recorded to species and element as far as was considered feasible, subject to constraints of time and resources; data concerning butchery, apparent age, pathology, burning recovery fracture and anatomical association was again recorded. Additionally, broad contextual patterns of fragment modal size, discolouration, surface texture, structural "feel", and attritional anomalies were also recorded.

Preservation.

Levels of fragmentation were generally high, though to some extent variable; within individual contexts modal fragmentation levels were largely around 50-70 mm, or to a lesser extent 30-50mm; however, values of 70-100 or greater were present in some contexts, and as low as 10-30 in others. Most contexts exhibited a more widely ranging pattern than modal values. Clearly, these are also gross values, taking no account of species size, or to some extent the effects of recovery (although fragmentary specimens were reconstructed as single units where possible, and newly fractured small fragments were excluded from counts). No direct correlation with context type was apparent, rather, with individual contexts. Thus, it was suspected that there was also an underlying variability in depositional characteristics of features.

In situ attritional damage as a consequence of root etching was commonly found, frequently extensive, and in some instances severe (closely related to individual contexts; around 25%); there appeared to be a higher incidence amongst Romano-British pits (in total contrast to Iron Age pits), although such contexts did account for around 33% of individual features. Severe damage showed a slightly higher incidence in those locations exhibiting greater fragmentation, and producing fewer specimens. In contexts where surface textural degeneration was less apparent, a more varied pattern of surface attrition was apparent, also associated with slight variartions in surface colouration, probably a consequence of *in situ* agencies of attrition. Whilst depth or aspect of *in situ* deposition may commonly be a factor in general root etching, the more severe cases of extensive surfacial damage, associated with severe fragmentation seem more likely to be a consequence of lengthy periods of surface exposure before incidental, rather than deliberate deposition, since such material is heavily discoloured and recent attritional degradation would expose virgin cortex.

Charred bone (5% of all specimens), was dispersed occasionally through many contexts, although several instances of specific context related patterning were recorded (for example pit 103, mixed Iron Age/Romano-British) and context 39 (Romano-British, pit). Fire reddened bone was also occasionally apparent in a number of contexts, though the precise incidence of such material is always difficult to determine in relation to general tanning and surface mineralisation *in situ* as a consequence of percolating groundwater.

Carnivore gnawing also occurred with a moderately high level of incidence, 35.3% of all significant bone exhibiting forms characteristic of attrition by dogs (following Binford, 1981:51-77); this represents a minimum value.

In the significant fraction, 38.6% of bones exhibited significant recovery fractures at one or both (14.4%) extremities. General incidence of recovery damage was higher, at a lower level of significance; in the less significant fraction 42.9% of specimens exhibited significant damage (excluding minor crushed fragments).

The nature of the deposited assemblage.

At the level of both overall and period groupings, the assemblage comprised a highly varied collection, consisting of most skeletal parts, across the range of the main domestic species, within the parameters of assemblage magnitude, and relative species frequency. Skeletal part frequencies in individual species (tables 3 and 4), are largely a consequence of their relative durability and that of internal zones; or size and recoverability. Thus, for example peak values for ovicaprines occur in tibia (distal shaft) and radius (proximal shaft); mandibles

are generally over represented as a consequence of excessive fragmentation. Relatively few small connecting bones or phalanges are present generally (ovicaprine first phalanges excepted). This also accounts for relatively high overall frequencies of cattle bones in relation to smaller species, by comparison with individual skeletal part NISP and DZ values (table 5); and the more evenly distributed pattern of skeletal part representation in this larger species. Minor discrepancies in under (cattle tibii and scapulae; ovicaprine scapulae) and over representation (ovicaprine 1st and cattle 3rd phalanges), are perhaps a consequence of small assemblage size.

This heterogeneous pattern of species and skeletal part representation continues through groupings around context typology and in local contextual sub groups, though clearly, with diminishing sub assemblage magnitude, patterning becomes increasingly random. However, a strongly contrasting pattern of dispersal is apparent in the relationship between ovicaprine and cattle frequencies in pit (total 234) and ditch (total 96) deposits in particular: ovicaprine values fall from 55% (63.5) of the total specimens in pits to 46.2% (42.3) in ditches; conversely, cattle values rise from 22.6% (24.8) to 37.6% (42.3). The difference is softened by higher frequency of ovicaprine axial material particularly detached teeth in the ditches; bracketted values indicate limb girdle and mandible specimen frequencies.The bracketted values may be compared with overall figures of 54.4 and 28.7 percent for ovicaprines and cattle respectively. Recovery factors may be implicitly involved in this relationship between larger ditch and smaller pit contexts, though some variation in depositional dispersal and perhaps activity location may also be implied. Clearly, such patterns of dispersal have considerable implications in relation to overall and period species frequency values, both in relation to the recovered assemblage and its representational value in terms of the deposited assemblage, particularly in the case of partially excavated ditches.

Seven articulated groups of bone were present, involving two, three or five specimens. A further seven small groups of possibly associated bone (in the basis of age and preservational parameters) were present including the large group of burnt bones in pit 103 (Romano-British). All were in pits (of varying date), except for three separate articulated groups of pig bone in 0511 (cobbled surface, Iron Age).and an associated pair of neo natal ribs in ditch 208 (Romano-British).

Such structural characteristics, taken in conjunction with the foregoing observations concerning the incidence of canid gnawing and general fragmentation, together with the small scale of contextual sub assemblages, indicate that the Manorhouse Farm assemblage consists largely, if not entirely of deposits of secondary origin, in relation to primary exploitation and consumption activities, probably discarded into primary locations at the ground surface, before redeposition after variable and (in the case of severely etched or weathered contextual material) sometimes lengthy taphonomic trajectories. Deposits appear to largely originate from slaughtering and primary butchery wastes, in view of the higher frequency of lower limb bones and adjusted mandible frequencies. Occasional articulated groups and generally anatomically dispersed, potentially associated bone (frequently neonatal ovicaprine and pig) are consistent with short primary trajectories.

Relative species frequencies.

The relative frequencies of the species represented in the assemblage were obtained by employing NISP (Number of Individual Specimens) and DZ (Diagnostic Zone) counts of the most frequent skeletal parts, or most frequently represented skeletal part zones respectively. In the case of DZ counts, these either employed morphologically distinctive zones of the part, or in the case of long bones,

artificial zones defined on the basis of longitudinal and transverse parameters. Thus, longbones were divided into three longitudinal zones, which were recorded as complete, more than 50% or less than 50% represented. Four transverse loci were defined in relation to for example anterior, posterior, medial or lateral aspects, and significant representation relative to these loci recorded. The results, in relation to overall, late Iron Age and Romano-British deposits are given in table 5.

The results derived from either method are closely comparable for each assemblage grouping, although minor variations occur in respect of NISP over representation and excessive fragmentation (overall and Romano-British, cattle, mandibles), or DZ over representation (Romano-British, pig mandibles).

Comparison of the results for assemblage groupings indicates an apparently significant shift of moderate proportions from late Iron Age to Romano-British, involving reduction in values for ovicaprine and horse, and consequent raising of values for pig, and to a variable extent cattle (little or no change is apparent in cattle DZ values). However, such shifts in values, in relation to extremely small assemblages must be viewed as severely influenced by sample size and/or context of recovery, and should not be taken too seriously. It is more probable that the larger, overall sample is equally representative of both period groups, and that there is unlikely to be any real change in the economic pattern for either period represented. When applied to larger assemblages, DZ values would be taken to be more representative of consumption patterns in a comparable assemblage framework; it is assumed that the same is also true of the Hatford assemblage.

In view of the discrepancies between ditch and other contexts including pits, the overall frequency values in table 3 may be compared with individual NISP ovicaprine and cattle values of 50.0 and 30.0 percent for ditches, and 55.0 and 25.0 for pits respectively. Again, bearing in mind the small scale of these sub assemblage groupings, some indication for potential shifts in relative species frequencies are apparent, though these must be set against volume recovery in relation to depositional significance of context types.

As a consequence of the small size of the assemblage and component sub assemblages, together with the general comparability of the species frequency data, the ensuing observations concerning individual species will be applied from an overall perspective.

Ovicaprines.

Of the 225 stratified ovicaprine specimens classified as significant, only 27 specimens were specifically attributable to either sheep or goat (after Boessneck, 1969; Payne 1985 for juvenile mandibles). Of these 25 were attributable to sheep, including 6 probable attributions; of the remaining two specimens, only one (the female horn core) was attributable to goat with any degree of certainty; these include a single sheep metatarsus with metrical values for the distal lateral condyle giving a factor of 63.7. Five unstratified significant ovicaprine specimens (context 503 <524>) were also classifiable as sheep or goat, of which one, a metacarpal was almost certainly goat, whilst a metatarsal was probably similarly attributable. Six of the sheep specimens were juvenile mandibles. It seems reasonable to conclude that ovicaprine flocks consisted overwhelmingly of sheep, although small numbers of goats were also kept.

Assessment of mandibular cheektooth wear and eruption was based upon the method outlined by Payne (1973 and 1987). The dental evidence derived from attached mandibular teeth, and for attached and detached M3 and m3 (table 6 and figure 1),

indicates a very high rate of mortality from 6 months to 2 years (particularly intense up to 1 year), with a moderate gradient thereafter, decreasing with increased age. Such curves correlates closely with modelled patterning for meat production (Payne, 1973:282). However, on the assumption that production is orientated to subsistence, the implication is that meat production is not optimal, since mortality peaks are far too early, 2-3 years being more appropriate; pressure on available land is implied. A relatively steep and foreshortened secondary curve would be inadequate to maintain the flock, and implies skewing in the relationship between production and consumption, perhaps as a consequence of marketing of older breeding stock. Iron Age and Romano-British samples are broadly compatible. Fusion evidence (table 7, after Silver, 1969) is not entirely consistent, and rarely corresponds to mandibular data (figure 1). This is an inevitable consequence of small local samples, further skewed by heavy fragmentation and carnivore gnawing.

Metrical data (table 8) was recorded in only 33 stratified specimens in a range of skeletal parts (74 individual measurements), and conform closely to previously documented size ranges for assemblages of comparable date (as far as comparison is possible), for example Ashville (Wilson, 1978) and Barton Court Farm (Wilson, 1984).

Two adult pelves were considered diagnostic of gender: one was female, the other male. The data is clearly unrepresentative; a far higher frequency of females would be anticipated, as a consequence of significant culling of juvenile males.

Cattle.

Ageing evidence is hampered by very small samples (fusion, 34; mandible and attached/detached teeth 13/14/14 specimens respectively, table 9). Fusion data (table 10, after Silver, 1969) is particularly skewed, with only two unfused specimens, presumably a consequence of carnivore gnawing and general taphonomic attrition of unfused limb bones. Recording of mandibular wear and eruption data followed Grant (1975 and 1982) arranged after Halstead (1985). The resultant curve (figure 2) is perhaps broadly acceptable, subject to the effects of secondary placement of specimens not directly attributable to age stages. A generally moderate mortality rate probably indicates a broadly based exploitation pattern, for meat, traction and secondary products, whilst peak mortality before 9 months, and at 2.5 to 3 years is probably a consequence of juvenile mortality and deselection, and more specific culling of young adults for meat production respectively. More detailed discussion of such a small sample would be extremely subjective.

Metrical data was recorded in 33 specimens giving only 63 measurements (table 11). Two longbones (of Romano-British date) were complete and gave the following withers heights: radius, 104.49 (after Matolcsi); metatarsus (after Fock), 112.27. Both withers heights and general metrical data again fell within the normal range for unimproved breeds of this date.

Pig.

Ageing data for this species is severely restricted, with only 9 mandible specimens and two detached teeth. Recording followed Grant (1975 and 1982), and resultant data is concentrated in two age stages at circa 8-13 months (3 specimens) and 13-16 months (5 specimens) respectively (after Habermehl, in Bull and Payne, 1982). Fusion evidence is compatible (table 12), with only one specimen fused at 2 years or beyond. Such patterning is consistent with moderately intense exploitation for meat.

Only 13 specimens yielded metrical data (22 measurements), of which none were complete fused bones. All conform to known size ranges for this date. No attempt has been made to distinguish wild pigs under these circumstances (table 13).

Horse.

Ageing data is predictably scant for this taxon. Only eight examples of fusion zones were present, of which seven, were fused, mainly from early fusing zones (five before 18 months). A single unfused bone of late fusing age (42 months) was also present (table 14). Mandibular evidence is a little more informative: three mandibles, a maxilla and two detached cheekteeth (including P2) were examined. Observation of crown heights (after Levene, 1982), gave values of 8-9 years, 10-11 years and 15-16 years for adult mandibles and the maxilla, and 6-7 years and over 10 years for the detached teeth. A juvenile mandible, with M1 at full height, in wear, and other molars yet to emerge, was aged at over 1 year old (after Silver, 1969). In general, it seems fair to assume that most horses lived to fairly advanced age, though occasional casualties were inevitable, along with localised culling of surplus or weak individuals.

Metrical data is extremely limited (table 15), with only 14 measurements taken. These fall within the range for assemblages of this date, presumably derived from small horses or ponies.

Dog.

Ageing data for dogs is confined to a single specimen each of adult mandible and maxilla fragment, and 2 fused metapodia (table 16). This is clearly insufficient material for comment. Presumably, similar principles apply here as to horse: most individuals living to relative old age, subject to accident, disease, or culling of surplus animals.

Metrical data was recorded only for the single late Iron Age mandible recovered (table 17); this fell into the upper end of the range for cheektooth row length for Iron Age specimens (Harcourt, 1974:160), attributable to an individual of medium size.

Bird bones.

Six bird bones were recovered from the hand collected assemblage. All were domesticates with the exception of a single complete corvid coracoid, of either rook or carrion crow. Two specimens of domestic fowl included a small, female tarsometatarsus, and an immature tibiotarsus. A single specimen of fragmentary adult goose tarsometatarsus, together with a juvenile radius and tibiotarsus, presumably also goose, complete the avian inventory. Two specimens were of Iron Age date, the fowl and goose tarsometatarsi. No metrical data was available.

Skeletal abnormalities.

There were 18 examples of skeletal abnormality in the assemblage as a whole (table 18), although seven of these were located in unstratified contexts (five in context 503, object code 536). All remaining examples, except two cases of moderate ovicaprine periodontal disease were from late Iron Age contexts.

Examples of abnormality were of a fairly predictable nature, consisting largely of the aforementioned periodontal disease (7 specimens), and cattle extremities with spavin, ring bone or probable associated development (5 specimens); these diseases are a consequence of loading of joints, often presumably related to use of

cattle for traction. Two examples of luxation or subluxation in ovicaprine bones of the elbow joint are commonly taken to be ligamental strains or sprains associated with penning (Baker and Brothwell, 1980). Two examples of congenital abnormality involving absence of ovicaprine teeth (Andrews and Noddle, 1975), or columns of teeth were also present; an abnormally developed ovicaprine tibia may also be similarly attributable to genetic defects. Finally, a single example of an osteoma was present in the diaphysis of an ovicaprine radius.

Butchered and worked bone.

There were 43 examples of butchered bone in the significant fraction, of which four were derived from unstratified contexts; of the remainder, 27 were of late Iron Age date, 11 Romano-British. A further two specimens were present in the less significant fraction, one from each period of occupation (table 19).

There is little value in extensive description of such patterning in such a small sample, within the context of the present report. With the exception of seven examples in ovicaprines and one horse, the bulk of such patterning occurs in the cattle bone assemblage. This is in part a consequence of the frequency of other species, and in part due to the ability to disarticulate bones of smaller species like sheep with knives enabling minimal damage to the bones. The majority of marking in all species is associated with chops and chop marks (including the horse humerus), mainly of extremities during the course of dismemberment or to a lesser extent jointing. Occasional instances of knife cuts or abbrasion in the diaphyses of lower long bones are also present, associated with skinning or filletting. Three metacarpi appear to have been split longitudinally from the distal extremity, presumably to facilitate marrow extraction, although one instance at may rather be a consequence of gnawing. A shaft fragment of cattle tibia had been viced in a double impact in mid shaft, which may also have been to extract marrow. A considerable proportion of limb bone fractures were a consequence of randomly located impacts in diaphyses, possibly suggestive of post butchery marrow fracturing (Wilson, 1978:137). The five butchered ribs were found in association in pit 242.

There were seven examples of worked bone. One, a pig ulna simply involved a distal diaphysis chop (unstratified), with bevelled fracture margins; a large rib (phase 1/ context 511; probably cattle), and ovicaprine metatarsal exhibiting similar patterning (phase 1/504); four bone points were also present, of diaphyseal fragments of ovicaprine radius (unstratified/0004) and tibia (phase 1/244), cattle metatarsal (phase 2/20) and unidentified limb (phase 2/0005).

Flotation samples.

Fifty-five specimens of animal bone were derived from only 22 of 45 flotation samples, from a variety of contexts. Many specimens were fragmentary, and several, weathered. The majority were of small rodent (37), these consisteing mainly of limb and caudal vertebrae; a single mandible being of either bank or field vole and several detached cheekteeth of mouse. Eight were bones of frog or toad, several age groups appear to be represented. Four specimens were of larger domestic species (table 2).

Conclusion.

The Manorhouse Farm assemblage consists of largely secondary residues probably relocated from primary discard locations at the ground surface where carnivore gnawing and other related sub aerial attritional processes have variably effected

considerable damage to the bone. Further slight surface attritional damage has been enacted in situ, prior to recovery.

The assemblage, as waste from domestic consumption, is numerically dominated by ovicaprines (circa 60%), largely bred for meat, though at an apparently far from optimal level, presumably a consequence of limited availability of grazing land under arable pressure (Robinson and Wilson, 1987:49). Presumably though, ovicaprines in particular will have also served to manure grazing land in the arable cycle. Small numbers of goats were also present, perhaps as suppliers of milk (Grant, 1984:113). Cattle, were kept in smaller numbers (circa 20%), though clearly remained the largest bulk meat supply, as a consequence of their greater size; mortality rates and pathological abnormalities imply a significant role as traction animals. Pigs, primarily bred for juvenile and immature meat, were kept in slightly smaller numbers than cattle, and thus exploited at a moderately intensive level, leading to a much reduced significance, for example in relation to cattle in bulk meat production. Small numbers of horses and dogs were also kept, horses perhaps being employed for light transportational traction and as mounts (Trow-Smith, 1957), surpluses, casualties or old animals being slaughtered for meat, presumably for consumption by the human community. Apparently very small numbers of domestic fowl and presumably domestic goose will have been supplementary to the meat diet, perhaps also kept for egg production. Evidence for hunting and fowling is virtually non existent in the assemblage, a single hare vertebra presumably originating as a chance occurrence, the corvid coracoid possibly taken as vermin. Absence of game species is considered as indicative both of limited availability of woodland (absence of deer), and low social status (Robinson and Wilson, 1987:49).

The site is located in the Vale of the White Horse, above the river gravel terraces. Relative species frequencies documented in table 3, are comparable with minimum numbers estimates for several sites in a variety of locations around the Upper Thames valley: Ashville (Abingdon) upon the second terrace, and Guiting Power (except pig) located upon the Cotswolds; though differing from second terrace sites like Appleford, Farmoor and City Farm, Hanborough, and also other upland locations (see Wilson, 1978:136). However, sample sizes are often small (for example Farmoor: Wilson, 1979:129). Presumably, broadly similar arguments in explanation of the frequency pattern at these sites, in terms of land drainage and pasture availability relative to dominant arable requirements or woodland survival, and perhaps social factors (in the absence of any clear environmental relationship), together with spatial and depositional variables between sites (Wilson and Allison, 1991), apply equally to Hatford.

Whilst mortality curves generally indicate a local subsistence based production economy, some indication of marketing activity is evident in the absence of very old or senile individuals of ovicaprines and cattle from the recovered consumption waste. Presumably, such activity will have had a slightly wider impact upon the stock husbanded from the site, for example in some importation of new breeding stock, but such patterning is invisible at this level of observation.

Clearly, stock domestic husbandry at the site, was on the basis of even this small scale evidence, a reasonably well integrated activity within a mixed subsistence economy probably favouring arable farming, though some pressure upon grazing resources is evident. Integration also occurs to some extent on a local regional level within a wider market economy, presumably throughout the two periods under observation, with (subject to the small assemblage size) little or no change in the economic activities conducted at the site during this time. Thus, Roman occupation seems on the basis of this evidence to have had little effect upon the economy, a feature typical of smaller rural "Celtic" settlements (Robinson and Wilson, 1987:56).

Appendix: human bone.

A small quantity of human bone was recovered from late Iron Age pit 0255. This was apparently a disarticulated scatter of associated though fragmented adult bones of unknown gender, presumably relocated from a disturbed burial deposit. Considerable recovery damage had been enacted, the group consisting of 137 small newly fractured fragments of variable anatomical origin including two articular ends of limb/girdle, and 31 identifiable specimens. These were as follows: 11 rib fragments (including 2 articular ends); four fragments of ilium; two skull fragments; four vertebrae; two sacral fragments; two femur (right fused proximal ball, and left fused distal extremity); humerus diaphysis fragment and right proximal ball; left calcaneum; diaphysis fragment and left distal fused tibia extremity; right proximal fused ulna.

Two instances of pathological abnormality were clearly evident. The first, in the tibia diaphysis fragment, the second in one of the rib specimens. Both consisted of ossified haematomas encircling the respective shafts, a consequence of healed ante mortem fractures. Raised nodular exostoses standing approximately 7mm above and along the tibial crest, and associated lesions in a distal (?) direction, in the lower shin area of the tibia are perhaps a consequence of ligamental damage resultant from poor healing and post traumatic stress.

References.

Andrews, A.H. and Noddle, B.A. (1975). The absence of premolar teeth from ruminant mandibles found at archaeological sites. In Journal of Archaeological Science 2: 137-144.

Baker, J. and Brothwell, D. (1980). Animal Diseases in Archaeology. London: Duckworth.

Binford, L.R. (1981) Bones: Ancient Men and Modern Myths. London: Academic Press.

Boessneck, J. (1969). Osteological differences between sheep and goats. In D. Brothwell and E.S. Higgs (eds) Science in Archaeology, 2nd edition: 331-358. London: Thames and Hudson.

Bull, G. and Payne, S. (1982). Tooth eruption and epiphyseal fusion in pigs and wild boar. In R. Wilson, C. Grigson and S. Payne (eds) Ageing and Sexing Animal Bones from Archaeological Sites: 55-71. Oxford: B.A.R. British Series, 109.

Driesch, A. von den and Boessneck, J. (1974) Kritische anmerkungen zur widerristhohenberechnung aus langenmassen vor und fruhgeschichtlichen tierknocken. In Saugetierkundliche Mitteilungen 22 (4): 325-348.

Driesch, A. von den. (1976). A Guide to the Measurement of Animal Bone from Archaeological Sites. Peabody Museum Bulletin No. 1. Harvard.

Grant, A. (1975). The animal bones. In B. Cunliffe (ed) Excavations at Portchester Castle, Volume 1, Roman: 378-408; 437-450. London: Reports of the Research Committee of the Society of Antiquaries 32.

Grant, A. (1982). The use of tooth wear as a guide to the age of domestic ungulates. In R. Wilson, C. Grigson and S. Payne (eds) Ageing and Sexing Animal Bones from Archaeological Sites: 91-108. Oxford: B.A.R. British Series, 109.

Grant, A. (1984) Animal husbandry in Wessex and the Thames Valley. In B. Cunliffe and D. Miles (eds) Aspects of the Iron Age in Central Southern Britain: 102-119. University of Oxford: Committee for Archaeology, Monograph 2.

Halstead, P. (1985). A study of mandibular teeth from Romano-British contexts at Maxey. In F. Prior, C. French, D. Crowther, D. Gurney, G. Simpson and M. Taylor (eds) Archaeology and Environment in the Lower Welland Valley; 219-23 E. Ang. Arch Rep 27.

Harcourt, R.A. (1974). The dog in prehistoric and early historic Britain. In Journal of Archaeological Science 1 (2): 151-175.

Levene, M. (1982). The use of crown height measurements and eruption - wear sequences to age horse teeth. In R. Wilson, C. Grigson and S. Payne (eds) Ageing and Sexing Animal Bones from Archaeological Sites: 223-250. Oxford: B.A.R. British Series, 109.

Payne, S. (1973). Kill off patterns in sheep and goats: the mandibles from Aswan Kale. In Anatolian Studies 23: 281-303.

Payne, S. (1985). Morphological distinctions between the mandibular teeth of young sheep, Ovis, and goats, Capra. In Journal of Archaeological Science 12: 139-147.

Payne, S. (1987). Reference codes for wear states in the mandibular cheek teeth of sheep and goats. In Journal of Archaeological Science 14: 609-614.

Robinson, M. and Wilson, R. (1987) A survey of environmental archaeology in the South Midlands. In H.C.M. Keeley (ed) Environmental Archaeology: A Regional Review, Volume II: 16-100. Historic Buildings and Monumnets Commission for England, Occasional Paper 2.

Silver, I.A. (1969) The ageing of domestic animals. In D. Brothwell and E. Higgs (eds) Science in Archaeology:283-302. London: Thames and Hudson.

Trow-Smith, R. (1957) A History of British Livestock Husbandry to 1700. London: Routledge and Kegan-Paul.

Wilson, R. and Allison, E. (1991) In T.G Allen (ed) An Iron Age and Roamno-British enclosed settlement at Watkins Farm, Northmoor, Oxon: 57-61. Oxfordshire Archaeological Unit: Thames Valley Landscapes, Windrush Valley, Volume 1.

Wilson, R., Hamilton, J., Bramwell, D. and Armitage, P. (1978). The animal bones. In M. Parrington (ed) The Excavation of an Iron Age Settlement, Bronze Age Ring Ditches and Roman Features at Ashville Trading Estate Abingdon (Oxfordshire), 1974-76:110-139. Oxfordshire Archaeological Unit Report 1, C.B.A. Research Report 28.

Wilson, R. (1979) The vertebrates. In G. Lambrick and M. Robinson (eds) Iron Age and Romano-British riverside settlements at Farmoor, Oxfordshire: 128-133. Oxfordshire Archaeological Unit Report 2, C.B.A. Reasearch Report 32.

Wilson, R. (1984) Faunal remains. In D. Miles (ed) Archaeology at Barton Court Farm, Abingdon, Oxon: Microfiche Chapter VI. Oxfordshire Archaeological Unit Report 3, C.B.A. Research Report 50.

Figure 1: Ovicaprine mortality; mandible and fusion data (overall).

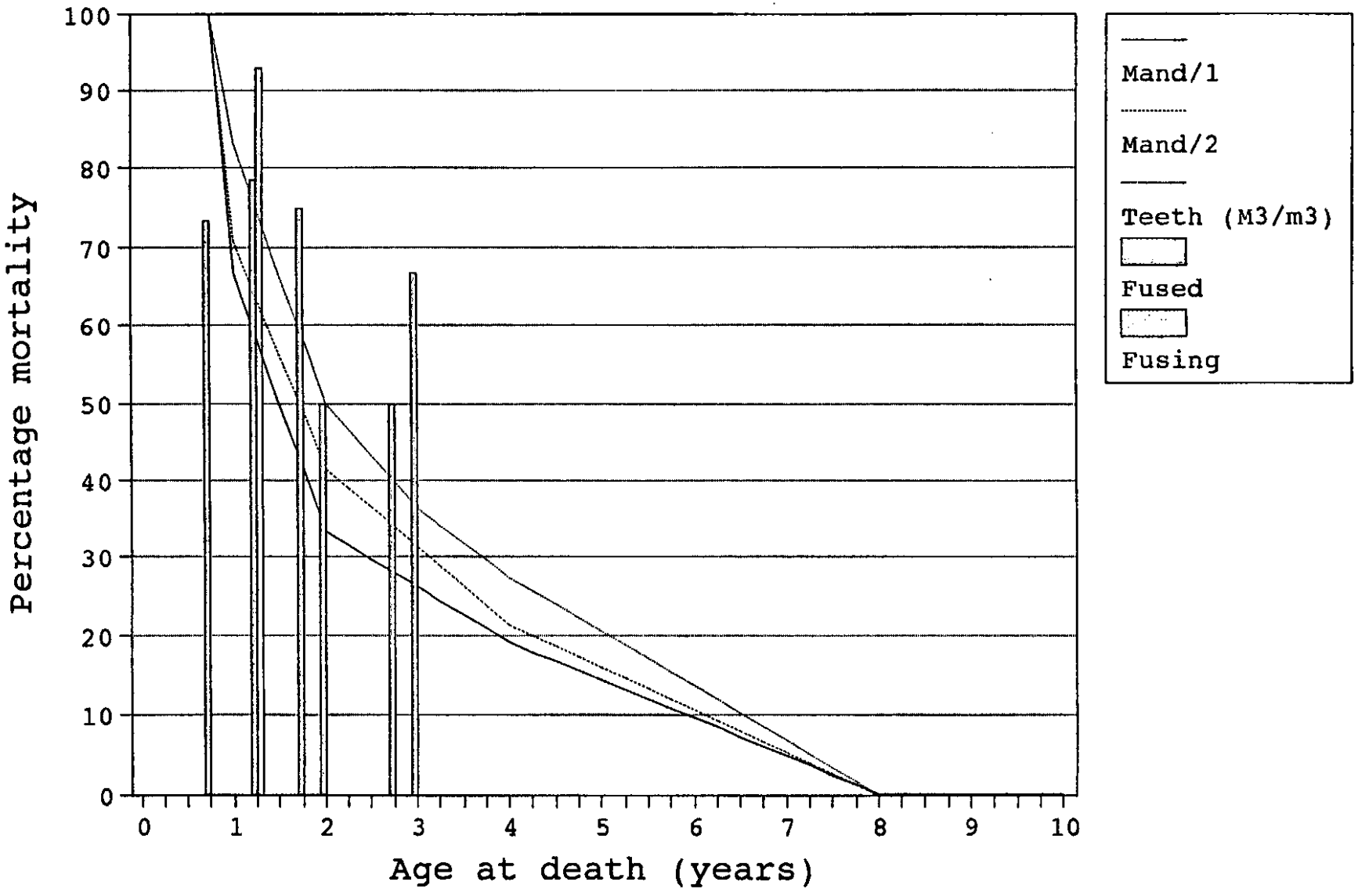


Figure 2: Cattle mortality;
mandible and fusion data (overall).

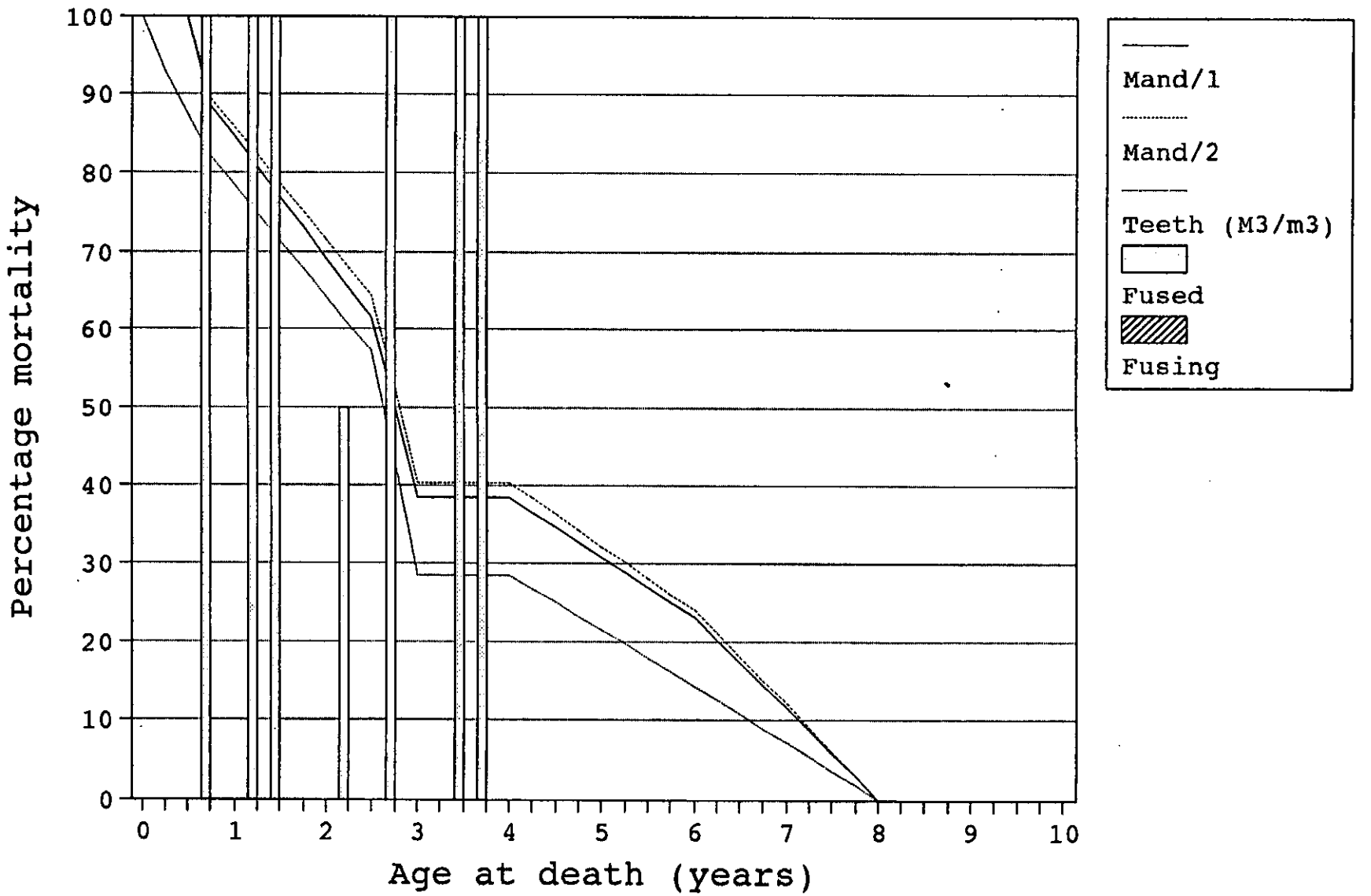


Table 1: Significant fraction; species frequencies by period and context type.

Species	Period	Context type 1	2	3	4	5	6	7	8	Total
Ovicaprine	I.A.	-	45	8	-	-	36	2	-	91
	R-B	3	85	31	3	1	7	-	-	130
	Both	3	130	43	3	1	43	2	-	225
Cattle	I.A.	1	29	11	-	-	25	1	-	67
	R-B	1	24	21	-	-	1	-	-	47
	Both	2	53	35	-	-	26	1	-	117
Pig	I.A.	-	3	2	-	-	18	-	-	23
	R-B	1	12	10	1	-	-	-	-	24
	Both	1	15	12	1	-	18	-	-	47
Horse	I.A.	-	3	-	1	-	8	2	-	14
	R-B	-	4	3	-	-	-	-	2	9
	Both	-	7	3	1	-	8	2	2	23
Dog	I.A.	-	3	-	-	-	2	-	-	5
	R-B	-	3	-	-	-	-	-	-	3
	Both	-	6	-	-	-	2	-	-	8
Large mammal	I.A.	-	-	-	-	-	-	-	-	-
	R-B	-	6	-	-	-	-	-	-	6
	Both	-	6	-	-	-	-	-	-	6
L/M mammal	I.A.	-	-	-	-	-	1	-	-	1
	R-B	-	-	-	-	-	-	-	-	-
	Both	-	-	-	-	-	1	-	-	1
Medium mammal	I.A.	-	9	-	-	-	1	-	-	10
	R-B	-	8	2	-	-	-	-	-	10
	Both	-	17	3	-	-	1	-	-	21
Total	I.A.	1	92	21	1	-	91	5	-	212
	R-B	5	142	67	4	1	8	-	2	229
	Both	6	234	96	5	1	99	5	2	449

Key to contexts: 1, Unspecified; 2, Pit; 3, Ditch; 4, Scoop; 5, Natural feature; 6, cobble and stone areas; 7, gully; 8, post hole.

Table 2: Flotation; material recovered from 5 litre samples.

Sample No.	Context		Frequ. bone 4mm	1mm	Rodent	Amphibian	Unid	Other
5	0113	Pit	-	3	-	(3)	-	-
6	0021	Pit	2	-	1	-	-	1*
7	0119	Pit	-	3	-	3	-	-
8	0123	Pit	-	1	-	-	1	-
14	0206	Pit	-	2	2	-	-	-
15	0207	Pit	-	4	4	-	-	-
19	0174	-	-	2	2	-	-	-
24	0098	Scoop	-	1	1	-	-	-
26	?	-	-	1	-	1	-	-
27	0130	Natural feature	1	-	1	-	-	-
28	0020	Pit	-	4	4	-	-	-
31	0109	Gully	-	2	2	-	-	-
32	0141	Pit	-	1	-	-	-	1*
34	0026	Ditch	-	4	4	-	-	-
35	0216	PH	-	1	1	-	-	-
36	0216	PH	-	2	-	1	1	-
37	0026	Ditch	-	6	4	-	2	-
40	0217	Pit	3	2	3	-	2	-
41	0217	Pit	-	3	2	-	-	1*
-	0222	Ditch	2	2	4	-	-	-
-	0165	Pit	-	1	(1)	-	-	-
-	0188	Pit	1	1	1	-	-	1*
Total			9	46	37	8	6	4

* Sample: 6, ovicaprine incisor; 32, sternum segment, neo natal medium sized species; 41, medium species, juvenile skull fragment; 0188, dog 1st phalange fused.

Table 3: Species skeletal part frequencies: significant (all stratified).

Skeletal part	Species	S/G	Cattle	Pig	Horse	Dog	L.A.	L/M.A.	M.A.	Hare	Total
Horn core		3	-	-	-	-	-	-	-	-	3
Skull		1	-	1	-	-	-	-	-	-	2
Maxilla		-	-	3	1	2	-	-	-	-	6
Mandible		30	15	8	4	1	-	-	-	-	58
Atlas		-	1	-	-	-	-	-	-	-	1
Axis		-	-	-	-	-	-	-	-	-	-
Cervical vertebra		1	-	-	-	1	-	-	-	-	2
Thoracic vertebra		3	1	1	-	-	-	-	-	-	5
Lumbar vertebra		-	-	3	1	-	-	-	-	1	5
Sacrum		-	-	-	-	-	-	-	-	-	-
Caudal vertebra		-	-	-	-	-	-	-	-	-	-
Vertebra (? type)		-	1	-	-	-	-	1	-	-	2
Sternum		-	-	-	-	-	-	-	-	-	-
Rib		1	-	-	-	-	6	-	20	-	27
Costal cartilage		-	-	-	-	-	-	-	-	-	-
Scapula		3	4	4	1	-	-	-	-	-	12
Humerus		16	9	4	3	-	-	-	-	-	32
Radius		29	10	1	1	-	-	-	-	-	41
Ulna		7	7	3	1	-	-	-	-	-	18
Carpal		-	5	-	-	-	-	-	-	-	5
Metacarpal		12	8	4	-	-	-	-	-	-	24
Pelvis		6	4	2	1	-	-	-	-	-	13
Femur		7	6	-	2	-	-	-	-	-	15
Patella		1	-	-	-	-	-	-	-	-	1
Tibia		43	1	2	-	-	-	-	-	-	46
Fibula		-	-	-	-	-	-	-	-	-	-
Astragalus		4	6	-	2	-	-	-	-	-	12
Calcaneum		2	3	1	-	-	-	-	-	-	6
Navicular cuboid		-	-	-	-	-	-	-	-	-	-
Tarsal		-	-	-	-	-	-	-	-	-	-
Metatarsal		18	12	2	2	1	-	-	-	-	35
1st Phalange		11	5	1	1	-	-	-	-	-	18
2nd Phalange		3	1	2	-	-	-	-	-	-	6
3rd Phalange		-	3	1	1	-	-	-	-	-	5
Metapodial		1	2	2	-	2	-	-	-	-	7
Sesamoid		-	1	-	-	-	-	-	-	-	1
Teeth (mandible)		23	12	2	2	-	-	-	-	-	39
Unid limb		-	-	-	-	-	-	-	1	-	1
Total		225	117	47	23	7	6	1	21	1	449

Table 4: Species skeletal part frequencies: less significant (all stratified).

Skeletal part	Species	S/G	Cattle	Pig	Horse	Dog	L.A.	L/M.A.	M.A.	Hare	S.A.	Bird	Total
Horn core		-	-	-	-	-	-	-	-	-	-	-	-
Skull		21	37	2	2	-	5	2	2	-	-	-	71
Maxilla		-	-	1	3	-	-	-	-	-	-	-	4
Mandible		38	45	1	2	-	-	-	-	-	-	-	86
Atlas		-	-	-	-	-	-	-	-	-	-	-	-
Axis		-	-	-	-	-	-	-	-	-	-	-	-
Cervical vertebra		1	1	-	-	-	3	-	-	-	-	-	5
Thoracic vertebra		4	2	-	-	-	2	-	1	-	-	-	9
Lumbar vertebra		-	-	-	-	-	-	1	3	-	-	-	4
Sacrum		-	-	-	-	-	-	-	-	-	-	-	-
Caudal vertebra		-	-	-	-	-	-	-	-	-	-	-	-
Vertebra (? type)		-	-	-	-	-	5	1	-	-	-	-	6
Sternum		-	-	-	-	-	-	-	-	-	-	-	-
Rib		-	-	-	-	-	56	3	64	-	-	-	123
Costal cartilage		-	-	-	-	-	-	-	-	-	-	-	-
Scapula		3	21	-	-	-	1	-	-	-	-	-	25
Humerus		5	11	-	2	-	1	-	-	-	-	-	19
Radius		23	10	-	-	-	-	-	-	-	-	-	33
Ulna		1	3	1	-	-	-	-	-	-	-	-	5
Carpal		-	-	-	-	-	-	-	-	-	-	-	-
Metacarpal		7	7	-	-	-	-	-	-	-	-	-	14
Pelvis		-	2	-	-	-	-	-	-	-	-	-	2
Femur		14	9	-	3	-	-	-	-	-	-	-	26
Patella		-	-	-	-	-	-	-	-	-	-	-	-
Tibia		22	6	4	3	-	-	-	-	-	-	-	35
Fibula		-	-	2	-	-	-	-	-	-	-	-	2
Astragalus		-	-	-	-	-	-	-	-	-	-	-	-
Calcaneum		-	-	-	-	-	-	-	-	-	-	-	-
Navicular cuboid		-	-	-	-	-	-	-	-	-	-	-	-
Tarsal		-	-	-	-	-	-	-	-	-	-	-	-
Metatarsal		12	6	-	-	-	1	-	-	-	-	-	19
1st Phalange		-	-	-	-	-	-	-	-	-	-	-	-
2nd Phalange		-	-	-	-	-	-	-	-	-	-	-	-

Table 4 (continued).

3rd Phalange	-	-	-	-	-	-	-	-	-	-	-	-
Metapodial	-	-	-	-	-	-	-	-	-	-	-	-
Sesamoid	-	-	-	-	-	-	-	-	-	-	-	-
Teeth (mandible)	27	16	1	-	-	-	-	-	-	-	-	44
Teeth (maxilla)	7	3	-	-	-	-	-	-	-	-	-	10
Teeth (nonspecific)	6	1	2	1	-	1	-	-	-	-	-	11
Unid limb	4	1	-	1	-	117	9	159	-	1	6	298
Unid axial	-	-	-	1	-	45	92	99	-	-	-	237
Unid girdle	-	-	-	1	-	12	43	1	-	-	1	58
Total	195	181	14	19	-	249	151	329	-	1	7	
1146												

Table 5: NISP and DZ frequency and percentage values; overall, late Iron Age and Romano-British.

Species	Phase	Overall		Iron Age		Roman-British	
		NISP	DZ	NISP	DZ	NISP	DZ
Ovicaprine	No.	42	35	21	19	21	16
	%	60.0	63.6	61.8	61.3	55.3	55.2
Cattle	No.	15	9	6	6	9	6
	%	21.4	16.4	17.6	19.4	23.7	20.7
Pig	No.	8	7	3	3	6	5
	%	11.4	12.7	8.8	9.7	15.8	17.3
Horse	No.	4	3	3	2	1	1
	%	5.7	5.5	8.8	6.5	2.6	3.4
Dog	No.	1	1	1	1	1	1
	%	1.4	1.8	2.9	3.2	2.6	3.4
Total	No.	70	55	34	31	38	29

Table 6: Ovicaprines; cumulative age stage frequency values from the dental evidence (all periods).

Age stage	Suggested age	Mandible 1 Final corr. count No.	%	Mandible 2 Tertiary data added No.	%	Attached/Detached M3 / DP4 No.	%
A	0 - 2 m.	-	-	-	-	-	-
B	2 - 6 m.	-	-	-	-	-	-
C	6 - 12 m.	7.0	33.3	8.0	29.2	3.7	16.8
D	1 - 2 yr.	7.0	66.6	8.0	58.4	7.3	50.0
E	2 - 3 yr.	1.5	73.7	2.8	68.6	3.0	63.6
F	3 - 4 yr.	1.5	80.8	2.8	78.8	2.0	72.7
G	4 - 6 yr.	2.0	90.3	2.9	89.4	3.0	86.4
H	6 - 8 yr.	2.0	99.8	2.9	100.0	3.0	100.0
I	8 - 10 yr	-	-	-	-	-	-
Total		21		27.4		22	-

Table 7: Ovicaprine fusion: individual skeletal parts (all periods).

Fusion Age	Fusion Zone	Element Frequency	Fused No.	%	Fusing No.	%	Unfused No.	%
6-8 m.	Scapula, dist.	-	-	-	-	-	-	-
	Pelvis, acet.	1	-	-	-	-	-	-
10 m.	Humerus, dist.	8	6	75.0	-	-	2	25.0
	Radius, prox.	7	5	71.0	-	-	2	29.0
13-16 m.	1 Phal., prox.	11	10	91.0	1	9.0	-	-
	2 Phal., prox.	3	1	33.3	1	33.3	1	33.3
18-24 m.	M'carpal, dist.	-	-	-	-	-	-	-
	Tibia, dist.	4	3	75.0	-	-	1	25.0
20-28 m.	M'tarsal, dist.	4	2	50.0	-	-	2	50.0
30-36 m.	Calcaneum, dist.	2	1	50.0	-	-	1	50.0
	Femur, prox.	2	1	50.0	-	-	1	50.0
36 m.	Radius, dist.	1	-	-	-	-	1	100.0
	Ulna, prox.	2	2	100.0	-	-	-	-
36-42 m.	Femur, dist.	1	-	-	-	-	1	100.0
	Tibia, prox.	1	-	-	-	-	1	100.0
	Humerus, prox.	2	-	-	-	-	2	100.0

Table 8: Ovicaprines; metrical data (* = Romano-British).

Element	Measure	No.	Range	Mean	S.D.	C.V.
Mandible	1 M3	6	19.0, 19.5, 20.75*, 20.85, 21.5*, 22.2.	20.63	1.2	5.82
	2 M3-M1	4	43.35, 44.3, 44.55*, 46.5.	-	-	-
	3 P4-P2	4	20.2*, 21.7, 22.1*, 23.8.	-	-	-
	4 M3-P2	3	64.5*, 66.1, 68.55.	-	-	-
Humerus	1 Bd	4	27.0*, 27.0, 27.3*, 27.55.	-	-	-
	2 Dd	3	20.3, 20.9*, 23.8.	-	-	-
	3 Bt	5	23.9, 24.7, 24.8, 25.5*, 25.55*.	-	-	-
	4 Dt	5	15.3, 15.6, 15.7, 16.3*, 16.4*.	-	-	-
M'carpal	2 Bp	2	17.75, 20.35*.	-	-	-
	3 Dp	2	12.7, 14.6*.	-	-	-
	4 SC	2	11.7*, 12.7.	-	-	-
Tibia	2 Bd	3	23.15, 24.0*, 25.3*.	-	-	-
	3 Dd	3	17.85*, 17.9*, 18.0.	-	-	-
Astragalus	1 Ll	1	24.9*.	-	-	-
	2 Lm	1	25.3*.	-	-	-
M'tarsal	4 SC	1	10.4*.	-	-	-
	5 Bf	1	20.6*.	-	-	-
	6 Bd	1	21.35*.	-	-	-
1 Phalanx.	1 Gl	8	29.0*, 30.55*, 31.0*, 31.6*, 31.85*, 32.7, 32.8*, 34.1*.	31.7	1.56	4.92
	2 Bp	8	9.4, 9.6*, 10.15*, 10.25*, 10.6*, 10.8*, 11.2*, 11.95*.	10.49	0.84	8.0
2 Phalanx	1 Gl	2	20.5, 20.7*.	-	-	-
	2 Bp	2	9.2*, 10.2.	-	-	-
Horn core	1 BC	1	77.0.	-	-	-
(goat;	2 Max BD	1	28.5.	-	-	-
female)	3 Min BD	1	17.9.	-	-	-

Table 9: Cattle; age stage frequency values and cumulative percentages from the dental evidence (all periods).

Age Attached/Detached stage	Suggested age	Mandible 1 Final corr. count		Mandible 2 Tertiary data added		M3 / DP4	
		No.	%	No.	%	No.	%
A	0 - 1 m.	-	-	-	-	1.0	7.1
B	1 - 8 m.	1.5	11.5	1.5	10.6	1.5	17.9
C	8 - 18 m.	1.5	23.0	1.5	21.3	1.5	28.6
D	18 - 30 m.	2.0	38.5	2.0	35.5	2.0	42.9
E	30 - 36 m.	3.0	61.5	3.4	59.6	4.0	71.4
F	Young adult.	-	61.5	-	59.6	-	71.4
G	Adult.	2.0	76.9	2.3	75.9	2.0	85.7
H	Mature adult.	3.0	100.0	3.4	100.0	2.0	100.0
I	Senile.	-	-	-	-	-	-
-	Total.	13	-	14.1	-	14	-

Table 10: Cattle fusion; individual skeletal parts (all periods).

Fusion Age	Fusion Zone	Element Frequency	Fused No.	Fused %	Fusing No.	Fusing %	Unfused No.	Unfused %
7-10 m.	Scapula, dist.	3	3	100.0	-	-	-	-
	Pelvis, acet.	2	2	100.0	-	-	-	-
12-18 m.	Humerus, dist.	3	3	100.0	-	-	-	-
	Radius, prox.	9	9	100.0	-	-	-	-
18 m.	1 Phal., prox.	5	5	100.0	-	-	-	-
	2 Phal., prox.	1	1	100.0	-	-	-	-
24-30 m.	M'carpal, dist.	3	2	66.7	-	-	1	66.7
	Tibia, dist.	1	-	-	-	-	1	100.0
27-36 m.	M'tarsal, dist.	2	2	100.0	-	-	-	-
36-42 m.	Calcaneum, dist.	-	-	-	-	-	-	-
42 m.	Femur, prox.	2	2	100.0	-	-	-	-
42-48 m.	Humerus, prox.	1	1	100.0	-	-	-	-
	Radius, dist.	1	1	100.0	-	-	-	-
	Ulna, prox.	-	-	-	-	-	-	-
	Femur, dist.	1	1	100.0	-	-	-	-
	Tibia, prox.	-	-	-	-	-	-	-

Table 11: Cattle; metrical data (* = Romano-British).

Element	Measure	No.	Range	Mean	S.D.	C.V.
Mandible	1 M3	4	25.6, 32.0, 35.0*, 36.05.	-	-	-
Scapula	2 LG	1	46.65.	-	-	-
	3 BG	1	40.9.	-	-	-
Humerus	3 Bt	2	64.2, 65.75.	-	-	-
	4 Dt	2	36.4*, 39.5.	-	-	-
Radius	1 GL	1	243.0*.	-	-	-
	2 Bp	2	77.1*, 77.2.	-	-	-
M'carpal	2 Bp	1	47.1*.	-	-	-
	3 Dp	1	28.0*.	-	-	-
	4 SC	2	32.2, 32.5.	-	-	-
	5 Bf	1	46.95.	-	-	-
	6 Bd	1	52.0.	-	-	-
Astragalus	1 Ll	5	56.6, 57.2*, 58.65, 58.75*, 58.9.			
	2 Lm	5	52.1*, 53.25*, 53.9, 54.1, 58.9*.			
	3 Dl	4	37.3*, 37.4, 37.8*, 38.6.			
M'tarsal	1 GL	1	206.0*.	-	-	-
	2 Bp	5	42.85, 43.3*, 47.4, 47.45*, 49.7*.	-	-	-
	3 Dp	5	41.15, 41.95*, 43.0, 43.4*, 44.75*.	-	-	-
	4 SC	4	20.1, 22.7*, 25.0, 26.05*.	-	-	-
	5 Bf	2	46.75*, 51.0*.	-	-	-
	6 Bd	2	50.5*, 55.3*.	-	-	-
1 Phalanx	1 Gl	4	53.8, 57.55*, 59.2, 59.85.	-	-	-
	2 Bp	5	23.2, 24.8*, 26.2, 28.7, 33.4.	-	-	-
3 Phalanx	1 Gl	1	68.3.	-	-	-
	2 Dl	1	48.9.	-	-	-

Table 12: Pig fusion relative to individual skeletal parts (all periods).

Fusion Age	Fusion Zone	Element Frequency	Fused No.	Fused %	Fusing No.	Fusing %	Unfused No.	Unfused %
1 yr.	Scapula, dist.	2	1	50.0	-	-	1	50.0
	Pelvis, acet.	1	1	100.0	-	-	-	-
	Humerus, dist.	3	1	33.3	1	33.3	1	33.3
	Radius, prox.	1	1	100.0	-	-	-	-
	2 Phal., prox.	2	1	50.0	1	50.0	-	-
2 yr.	M'carpal, dist.	2	-	-	-	-	2	100.0
	1 Phal., prox.	1	1	100.0	-	-	-	-
	Tibia, dist.	1	-	-	-	-	1	100.0
2.25 yr.	M'tarsal, dist.	2	-	-	-	-	2	100.0
	Calcaneum, dist.	-	-	-	-	-	-	-
3-3.5 yr.	Ulna, prox.	1	-	-	-	-	1	100.0
3.5 yr.	Humerus, prox.	1	-	-	-	-	1	100.0
	Radius, dist.	-	-	-	-	-	-	-
	Femur, prox.	-	-	-	-	-	-	-
	Femur, dist.	-	-	-	-	-	-	-
	Tibia, prox.	-	-	-	-	-	-	-

Table 13: Pig; metrical data (* = Romano-British).

Element	Measure	No.	Range	Mean	S.D.	C.V.
Mandible	1 M3	2	29.5*, 36.5*.	-	-	-
	3 P4-P2	1	31.6.	-	-	-
Humerus	1 Bd	2	32.0*, 36.45.	-	-	-
	2 Dd	2	33.9*, 35.9.	-	-	-
	3 Bt	2	28.45*, 30.2.	-	-	-
	4 Dt	2	24.2*, 25.7.	-	-	-
Radius	2 Bp	1	27.5.	-	-	-
MC 3	2 Bp	2	16.1, 16.45.	-	-	-
MT 3	2 Bp	1	14.0	-	-	-
MT 4	2 Bp	1	12.55	-	-	-
1 Phalanx	1 Gl	1	34.6.	-	-	-
	2 Bp	1	14.1.	-	-	-
2 Phalanx	1 Gl	1	22.0.	-	-	-
	2 Bp	1	14.25.	-	-	-
3 Phalanx	1 Gl	1	27.6.	-	-	-
	2 Dl	1	26.3.	-	-	-

Table 14: Horse fusion; individual skeletal parts (all periods).

Fusion Age	Fusion Zone	Element Frequency	Fused No.	Fused %	Fusing No.	Fusing %	Unfused No.	Unfused %
9-12 m.	2 Phal., prox.	-	-	-	-	-	-	-
12 m.	Scapula, dist.	1	1	100.0	-	-	-	-
13-15 m	1 Phal., prox.	1	1	100.0	-	-	-	-
15-18 m.	Humerus, dist.	3	3	100.0	-	-	-	-
	Radius, prox.	-	-	-	-	-	-	-
	M'carpal, dist.	-	-	-	-	-	-	-
16-20 m.	M'tarsal, dist.	-	-	-	-	-	-	-
18-24 m.	Pelvis, acet.	1	1	100.0	-	-	-	-
20-24 m.	Tibia, dist.	-	-	-	-	-	-	-
36 m.	Calcaneum, dist.	-	-	-	-	-	-	-
36-42 m.	Femur, prox.	1	1	100.0	-	-	-	-
	Femur, dist.	-	-	-	-	-	-	-
	Tibia, prox.	-	-	-	-	-	-	-
	Humerus, prox.	-	-	-	-	-	-	-
42 m.	Radius, dist.	1	-	-	-	-	1	100.0
	Ulna, prox.	-	-	-	-	-	-	-

Table 15: Horse; metrical data (* = Romano-British).

Element	Measure	No.	Range	Mean	S.D.	C.V.
Mandible	1 M3	1	29.7.	-	-	-
	2 M3-M1	1	81.7.	-	-	-
	3 P4-P2	2	83.5, 92.9.	-	-	-
	4 M3-P2	1	174.6.	-	-	-
Humerus	3 Bt	1	71.0*.	-	-	-
	4 Dt	1	50.5*.	-	-	-
Astragalus	1 GH	1	48.1.	-	-	-
	2 LmT	1	48.2.	-	-	-
	3 BfD	1	43.65.	-	-	-
	4 GB	1	51.1.	-	-	-
M'tarsal	2 Bp	1	39.65.	-	-	-
1 Phalanx	1 Gl	1	71.9.	-	-	-
	2 Bp	1	47.55.	-	-	-

Table 16: Dog; metrical data.

Element	Measure	No.	Range	Mean	S.D.	C.V.
Mandible	2 M3-M1	1	41.1.	-	-	-
	3 P4-P2	1	41.05.	-	-	-
	4 M3-P2	1	76.9.	-	-	-

Table 17: Skeletal abnormalities (* = Unstratified).

Species	Skeletal Part	Frequency Popn	Frequency No.	Description	Condition
Ovicaprine	Mandible		1*	P2 missing; apparent knitting of bone after appearance of rest of PM row.	Congenital absence of tooth.
			1	Vestigial M3 third column, possibly associated . deep wear between molar columns in molar row.	Genetic (?) absence of column.
			3	Deep/moderate alveolar recession, general and in 2 cases more emphatic in P4/M1 area.	Moderate periodontal disease.
			1*	Premolar teeth lost, presumably ante mortem. P4 alveolus open, P2 closed and P3 closing Severe swelling in diastema and premolar area, with enlarged nutrient foramen. Large drainage sinus (22mm long) directly below, with fibrous exostoses. M1 and M2 have fibrous roots.	Severe periodontal disease.
	d.t mand.		2	Fibrous roots.	Periodontal disease.
	d.t.max.		1*	Fibrous roots.	Periodontal disease.
	Humerus		1	Hook like exostosis in lateral aspect of distal fusion.	Luxation or subluxation.
	Radius		1	Hook like exostosis in lateral aspect of proximal fusion.	Luxation or subluxation.
			1	Smooth longitudinally oriented exostosis in medial margin of ventral face, at one third length from proximal extremity. Dimensions 2.5 by 16.5 mm. (height 2-3mm.).	Osteoma?
	Tibia		1	Nutrient foramen sited in emphatic groove in lateral margin.	Congenital abnormality?
Cattle	Metacarpal		1	Proximal extremity: dorso/lateral nodular exostoses and splaying.	High spavin, presumed traction induced.
	Calcaneum		1*	Slight sponginess within artication, though absent from articulatory facets.	High spavin.
	Metatarsal		1*	Strongly developed ridging in medial and lateral aspects of ventral face, together with splaying in proximal extremity	? High spavin and associated diaphyseal development.

Table 17 (continued).

	1*	Strongly developed ridge medial aspect of dorsal face, mid shaft; corresponding ridge development in ventral face, with exostoses (burrs) developed (11mm long) longitudinally mid shaft and again 2.5 cm distally, in corresponding location.	? Associated with traction.
1 Phalange	1	Nodular exostoses around the dorsal rim of the articulation.	High ring bone.

Table 18: Occurrence of butchery relative to species and skeletal part.

Species	Skeletal part	Frequency		
		Phase 1	Phase 2	Unstrat.
Ovicaprines	Scapula	-	-	1
	Humerus	2	-	-
	Tibia	-	1	-
	1 Phalange	1	1	-
	Cervical vertebra	-	1	-
Cattle	Scapula	3	-	-
	Humerus	1	1	1
	Radius	5	-	1
	Ulna	1	-	-
	Metacarpal	3	1	-
	Pelvis	1	-	-
	Tibia	1	-	-
	Astragalus	2	2	-
	Metatarsal	2	-	1
	1 Phalange	2	-	-
	2 Phalange	1	-	-
	Atlas	1	-	-
	Vertebra	1	-	-
Pig	Ulna	-	-	1
Horse	Humerus	1	-	-
Large Animal	Rib	-	4	-

TEMPVS REPARATVM

Archaeological and Historical Associates Limited

29 BEAUMONT STREET
OXFORD OX1 2NP

Tel: 0865 311046
Fax: 0865 311047

CONSULTANCY • DESK-TOP & FIELD EVALUATION
SURVEY • EXCAVATION • PUBLISHING
ENVIRONMENTAL IMPACT ASSESSMENT
PUBLIC INQUIRY REPRESENTATION
SCHEDULED ANCIENT MONUMENT NEGOTIATIONS